Critical Capabilities for Mobile BI

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Analyst(s): Joao Tapadinhas

Mobile business intelligence is growing fast in the corporate landscape, with many companies piloting or planning deployment initiatives. This research will help BI leaders understand the disparate capabilities available in the market and facilitate the selection of a mobile BI solution.

Key Findings

- The key adoption drivers for mobile business intelligence (BI) relate to ease of use and an engaging experience. More advanced capabilities, such as the use of GPS or information exploration in offline mode, are only available in some of the tools, and don't generally drive user adoption.

- Mobile BI solutions split into three technological categories. Most of them are native applications for iOS or Android devices, a few others are typical Web-based solutions, and a third (growing) group is made up of hybrid solutions — rendering HTML content inside a native application container and behaving largely like their Web-based counterparts.

- Several solutions promote a "design once, consume everywhere" authoring approach for desktop and mobile devices. This strategy alone fails to provide a good mobile experience, due to smaller screen sizes and touchscreen interfaces.

- Most mobile BI vendors leverage mobile security capabilities, delivering secure authentication, VPN and Hypertext Transfer Protocol Secure (HTTPS) support, code signing and validation, application sandboxes, local data encryption and remote wipe, creating a BI ecosystem that is more secure than that of a traditional laptop setup.

Recommendations

For leaders of BI teams:

- Make sure to optimize BI content for smaller screens and touch-based interfaces, to avoid user frustration and promote adoption.

- Include a mobile device management platform in your mobility deployment plan, as a cornerstone for application configuration and management.

- Select the mobile BI tool according to the organization's required capabilities, and don't be restricted to the incumbent vendor if it fails to fulfill your needs. To meet your requirements, consider the addition of a pure-play mobile BI vendor, to augment the existing BI platform.

What You Need to Know

Mobility, in the form of smartphones and tablets acting as computing devices, has proved very popular with consumers, and is now making its way into the corporate market. Email is still the killer application, but an increasing number of initiatives are being launched in areas such as ERP, CRM, sales force automation and BI (which is covered by this report).

Confirming this trend, Gartner's latest survey of 1,364 organizations that use BI tools indicates that: 8% are actively using mobility for BI; an additional 13% are running pilot initiatives; and an additional 33% have plans to deploy mobile BI within 12 months. This represents an unusual adoption rate for a BI capability, considering that its growth trigger, after a marginal uptake for years, was the release of the iPad in 2010 — just two years ago.

Traditional BI vendors are updating their platforms for mobility but, in some cases, they are lagging behind customer demand for ease of use, functionality or mobile ecosystem support (such as Google Android). Also, many require the latest platform version to deliver mobility capabilities — which isn't always the version deployed by organizations. These factors have created the opportunity for a number of new players in the market, which are able to mobilize BI content from incumbent vendors by tapping into their platforms at the report definition layer, and which can "translate" report layouts and security definitions onto mobile devices.

These pure-play mobile BI vendors' tools may be more than a momentary answer to a market problem, as they can connect to multiple platforms (a common situation in many organizations), and work as BI information aggregators on mobile devices. We evaluate some of these solutions in this research note, as an alternative to traditional BI vendors' products.

Strategic Planning Assumption(s)

By 2013, 33% of BI functionality will be consumed via handheld devices.

Analysis

Introduction

Increasingly, the main question regarding mobile BI is, "How can we implement mobile BI?" rather than "Should we do it?" The challenge is not in proving its value — as it is easy to sell (to executives, for example) — but in selecting the correct tool for a successful initiative, as many organizations lack an understanding about currently supported capabilities from incumbent vendors and new players in the market.

To help address this issue, this research evaluates 11 vendors with 12 products that could implement five typical use cases that fit a broad range of needs in organizations. They serve different user constituencies and represent an increasingly sophisticated level of maturity:

- **BI content mobilization** — existing BI users that need mobility for basic BI consumption.

- **Mobile dashboards** — executive and management roles in the organization.

- **Field workers' reports** — sales, service and other workers on the go.

- **Mobile analytics** — knowledge workers.

- **Mobile BI applications** — customers and partners using customer-facing BI applications.

To support this evaluation, each product was evaluated on 11 critical capabilities, examining and comparing the tools in terms of how they provide support for 45 items of functionality.

Product Class Definition

Mobile BI is not simply a BI Web portal accessed through a smartphone or tablet. To be able to act as mobile BI solutions, the tools must be able to deliver BI content that leverages the touchscreen experience, minimizing the drawbacks of smaller screens, low performance and reduced memory, and taking advantage of some of the unique capabilities of mobile devices, such as location awareness.

The products included in this research were built specifically (or at least optimized) to have relevant enhancements in most of those areas, and to be able to serve mobile devices adequately, differentiating them from traditional Web portal access to BI content.

Critical Capabilities Definition

Mobile BI capabilities are still evolving as vendors gain experience in mobility and customers demand the right functionality to fulfill their needs. Most of the tools in the market focus on report and dashboard delivery, but more advanced and less common capabilities are also evaluated in this research. We assess the tools' ability to provide analytics, rich application functionality (such as multimedia or write-back to operational systems), and custom BI application development for mobile devices. Most organizations won't try to explore these capabilities in a first project, but BI leaders should take them into account to be able to define a road map that delivers more sophisticated functionality in the future.

We consider 11 critical capabilities, divided into two groups:

Critical Capabilities for End Users

- Information display and interaction.

- Information exploration.

- Analytics.

- Context awareness.

- Offline mode exploration.

- Rich application functionality.

- Multiple device support.

Critical Capabilities for Developers and System Administrators

- Ease of use for developers.

- Application development.

- Administration.

- Security.

Each capability is further analyzed according to several functional items that will have different levels of relevance for different organizations, or even disparate implementations within the same organization. When selecting a mobile tool, BI leaders must go beyond the use case evaluation, and must identify the functionality items that are mandatory according to their business and technical requirements, to assess their level of support.

Evaluation Methodology Used

To be able to deliver a unified and coherent evaluation, we asked the participating vendors to identify their reference solution. In most cases these were Apple iPad solutions — the most pervasive device in mobile BI initiatives — although many initiatives also support other devices.

We then used the set of questions presented below to assess 45 functionality items that were rated in each tool as: "no support," "partial support" or "full support," according to a broad range of evidence provided by vendors, such as:

- Software demonstrations.

- Recorded videos.

- Screen shots.

- Sample dashboards and applications.

- Reference to user manual excerpts or other publicly available information.

- Written responses.

This assessment of supported functionality played a major role in the product evaluation, and was complemented with a comparative analysis of how each tool fulfilled each of the eleven critical capabilities, resulting in a final score ranging from 1.0 to 5.0. Two solutions that provide full support for the touchscreen experience, for example, might do so with different levels of user-friendliness, and would be differentiated accordingly in the final scoring.

Critical Capabilities for End Users

The end user is the main target for this group of capabilities, and the experience provided is globally considered more relevant than the breadth and depth of functionality. With mobile BI, many companies are looking for a solution to deliver BI capabilities to the CxO level, line of business managers, salespeople and field workers — all of them wary of complex information systems.

Information Display and Interaction

- **Rich visual experience.** Does the application offer visually compelling outputs, with animated components, large icons, buttons, menus and selectors, an adequate font size according to the device's screen size, and engaging charts and table layouts?

- **Information overlay on maps.** Is the application capable of overlaying on maps at least three types of geo-located information, such as shaded regions, bubbles, pie charts or routes?

  - Solutions without street-level detail, or that need to be integrated with external mapping solutions that require additional licensing costs from customers, will be considered as having partial support.

- **Touchscreen experience.** Is the touchscreen interface leveraged, adhering to mobile conventions and using gestures (such as swipe, tap and pinch) to interact with the information, instead of, for example, scroll bars?

  - Are users able to interact with report components, getting feedback on their actions, such as tapping a bar on a chart and obtaining information detail?

- **Responsiveness.** After the initial report loading, do users get an immediate response from their actions, such as opening a list box or changing a filter selection?

  - Solutions that require online interaction with a server, and that depend on communications, will be considered, at most, as having partial support.

- **Dashboard delivery.** Does the application provide easy to use reports, structured in multiple pages or tabs, with prebuilt information visualizations such as key performance indicators (KPIs), tables, charts and maps, and is it able to provide a quick overview of a business topic to a casual user?

Information Exploration

- **Guided information exploration.** Does the application allow predefined navigation from one report to another, by clicking data fields and other report components, allowing for the creation of information exploration paths?

  - Does the application provide drilling to details through interaction with table cells and chart components?

  - Do reports and dashboards support dynamic filters to change results after execution?

- Does the application support linking between information visualizations, such as selecting a row in a table and changing the information displayed on an associated graph?

- **Table manipulation.** Does the application support sort, column hiding, removal or repositioning within a table?

- **Manipulation of graphical visualizations.** Does the application provide ways to manipulate visual representations of data, such as zooming and panning on a specific area of a bubble chart, or highlighting a line or bar?

- **Map manipulation.** Are users able to drill into the information on maps and change detail or focus, with actions such as tap, zoom in and out, and pan?

- **Report development on the device.** Can the user, on the mobile device, assemble and save new reports using prebuilt components or ad hoc query building functionality?

Analytics

- **Ad hoc information exploration.** Is the user able to freely explore a set of predefined data, using methods such as drag and drop or multiple interactions with tables and charts, to build and change queries?

- **Packaged analytics.** Does the application have available predefined, domain-specific, analytic models that the user can apply to a set of information or events, to generate a result (such as "additional product to recommend when customers make a purchase")?

  - Mobile optimized packaged applications will score better than desktop-based solutions that can also run on mobile devices.

- **Scenario simulations.** Is the application capable of "what if" scenario modeling, enabling analysts to alter certain parameters to test their impact?

  - Impact analysis using dashboards with sliders, selectors or limited data entry features to evaluate an outcome will be considered partial support.

- **Analytic model development on the device.** Is the user able to build and save analytic models, such as a predictive model, that can later be applied to derive an outcome?

  - Automated trend lines in graphs won't be considered as support in this item. But solutions that allow the development (on the desktop) of an analytic model and its inclusion as a metric or attribute in a mobile table or chart are considered as having partial support.

Context Awareness

- **GPS integration.** Is the application able to use GPS to automatically filter reports, delivering, for example, the sales performance of a store being visited?

- **Camera integration.** Is the application capable of using the device's camera to read bar codes or identify images to, for example, filter reports?

- **Voice integration.** Is the application able to execute or filter reports according to voice commands?

- **Sensor integration.** Is the application capable of sensor integration such as compass, gyroscope or accelerometer?

  - Solutions that can detect device rotation and adequately render BI content that respects orientation will be considered as having partial support.

Offline Mode Exploration

- **Offline information navigation.** Are users able to navigate information without an active data connection, using locally stored information?

- **Automated information download.** Is it possible to automatically download pre-selected reports or dashboards, in the background, or upon application activation?

- **On-demand information download.** Are users able, on the device, to select and immediately download a report for later exploration without a data connection?

Rich Application Functionality

- **Collaboration.** Does the application provide collaboration features such as annotations, screen shot emailing, discussion threads and mobile screen sharing for live discussions?

- **Alerting.** Does the application provide notifications generated by predefined data monitoring rules or event occurrences (for example, KPI threshold achieved)?

  - Only integration with native mobile notification systems, such as Apple Push Notifications, will be considered as full support.

  - BI platform-based alerts through email or SMS will be considered as partial support.

- **Write-back.** Is the application capable of simple data entry, such as filling a customer order form, and writing back to business applications?

  - Is the application capable of workflow triggering in business applications?

- **Multimedia support.** Does the application support rich content (such as photos, video, sound and text files) as part of a BI report?

- **Augmented reality.** Is the application able to overlay information on top of a video stream from a camera, or a map that is being updated in real time according to the user's position and orientation?

Multiple Device Support

- **Apple.** Does the application support Apple iOS smartphones and tablets?

- **Google.** Does the application support Google Android smartphones and tablets?

- **Research In Motion (RIM).** Does the application support RIM smartphones and tablets?

- **Microsoft.** Does the application support Microsoft smartphones and tablets?

Critical Capabilities for Developers and System Administrators

Developers and system administrators require a different set of capabilities. Their focus is on how to leverage existing BI assets — platforms, data sources, reports and metadata — in developing new reports and managing and securing the mobile devices. For more advanced scenarios, they will also care about the development of custom mobile BI applications for internal use or customer-facing deployment.

Ease of Use for Developers

- **Integrated development workbench.** Does the application share a single workbench for desktop- and mobile-based report development, requiring similar skills?

- **Reuse of existing content.** Is the application capable of displaying existing reports without modifications to the design?

  - Solutions that leverage existing content but that require conversion or rework to mobilize it will be considered as having partial support.

- **New content development.** Is the process to create new mobile content quick and straightforward?

  - Solutions that require actions in different development workbenches, even if they are quick and straightforward, will be considered as partial support.

- **Cross-BI platform integration.** Is the application capable of integration, at the metadata or report layer level — not only at a data layer level — with at least two external BI platforms from different vendors, and can it leverage metadata, security and users' definitions to mobilize existing BI content?

Application Development

- **Mobile application integration.** Does the application allow the integration of mobile BI outputs into external applications, or the integration of external application components into the mobile BI application?

- **Application customization.** Does the application provide customization capabilities for deployment with a "skinned" interface, using customers' brand and image?

- **Application distribution.** Does the application provide processes for user-driven setup, including, if needed, self-service installation and automated parameters definition to connect to a BI server, allowing for wide mobile BI application distribution (for example, for customer-facing BI applications)?

- **Development software development kit (SDK).** Does the application provide a development SDK for advanced mobile BI application customization and integration?

- To be evaluated as having full support, applications have to provide an SDK with specialized mobile BI capabilities.

Administration

- **Integrated mobile infrastructure.** Does the application share the same server infrastructure as the desktop BI platform, leveraging existing metadata, security and users' definitions?

- **Administrator-driven setup.** Does the application provide capabilities for administrator-driven setup, including, if needed, remote installation and automated parameters definition to connect to a BI server?

- **Application management.** Does the application provide capabilities to force upgrade and patch installation, and to delete or configure the client application remotely?

Security

- **Communications security.** Does the application support two-factor authentication certificates for the device and BI server, encrypted communications (such as HTTPS) and VPN connections?

- **Data security.** Does the application encrypt locally stored data? Does it support remote data wipe capabilities and the option for cache deletion when exiting the application?

  - Web-based solutions that don't store local data on the device will be considered as having full support.

- **Application security.** Does the application require a password to access BI content online and, if supported, in offline mode?

- **BI objects and user security.** Does the application implement access filters to BI objects and user-based access restrictions to BI content?

Use Cases

Organizations have different usage scenarios for mobile BI. Often, within the same organization, use cases will evolve as new constituencies adopt mobility, forcing BI leaders to plan beyond their first project, so they can address future needs with the same software solution.

Our critical capabilities research focuses on five use cases (see Table 1):

- **BI content mobilization.** This is the first step in mobile BI for many organizations. The driving objective is the direct transposition of content built for desktop consumption into mobile content that can serve existing BI users. Solutions will often be built around simple BI reporting, as opposed to visually rich mobile dashboards. Capabilities not available or with reduced relevance in traditional BI, such as context awareness or rich application functionality, won't be needed in this use case.

- **Management dashboards.** These are used to deliver KPIs, and need to be simple to use, interactive and engaging to serve the top levels of the organization's hierarchy. They will usually require access to multiple information sources that might be spread between several BI platforms. Having broader access to — sometimes sensitive — information demands a secure environment to prevent severe problems in case of device loss.

- **Field workers' reports.** In this use case we target constituencies such as sales teams, store, warehouse and production plant managers, truck drivers, doctors or security forces. Their "office" is away from a desk or a meeting room at headquarters, requiring better mobility support and, in some cases, maps, GPS and offline navigation. The information scope is narrower but may need detail down to the customer or transaction record, in which case an online connection is required.

- **Mobile analytics.** The title for the use case can be an overstatement of the overall market maturity but, by including a wide range of information exploration capabilities (such as information navigation, filters or drilling), and heavily weighting the analytics critical capability, we'll be able to evaluate solutions that can address business users' needs beyond descriptive BI in static reports.

- **Mobile BI applications.** Includes the creation of software that runs, from a user's perspective, autonomously from a BI platform. This can happen with the repackaging of mobile BI tools, rebranded and fit for a single domain purpose, the integration of BI content with business applications being mobilized in the company, or the development of customer-facing BI applications used by partners or customers. Capabilities that serve developers and system administrators are paramount to the success of the use case.

Table 1. Weighting for Critical Capabilities in Use Cases

Critical Product Capabilities	Overall	BI Content Mobili-zation	Management Dashboards	Field Workers' Re-porting	Mobile Analytics	Mobile BI Applica-tions
Information display and interaction	15.0%	15.0%	30.0%	10.0%	5.0%	10.0%
Information exploration	15.0%	15.0%	10.0%	10.0%	25.0%	10.0%
Analytics	5.0%	5.0%	5.0%	0.0%	25.0%	0.0%
Context awareness	5.0%	0.0%	5.0%	10.0%	5.0%	5.0%
Offline mode exploration	10.0%	5.0%	5.0%	15.0%	5.0%	5.0%
Rich application functionality	5.0%	0.0%	5.0%	10.0%	0.0%	5.0%
Multiple device support	10.0%	10.0%	10.0%	10.0%	5.0%	15.0%
Ease of use for developers	10.0%	30.0%	5.0%	5.0%	5.0%	5.0%
Application development	5.0%	0.0%	0.0%	5.0%	5.0%	25.0%
Administration	5.0%	5.0%	5.0%	10.0%	5.0%	5.0%
Security	15.0%	15.0%	20.0%	15.0%	15.0%	15.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

BI = business intelligence

Source: Gartner (April 2012)

Inclusion Criteria

We included all vendors with a mobile BI solution available in the market, from the Leaders and Challengers quadrants of the "Magic Quadrant for Business Intelligence Platforms." These are: IBM, Information Builders, MicroStrategy, Oracle, QlikTech, Tableau Software and Tibco Spotfire.

To be able to present an alternative to traditional BI solutions, we also added three pure-play vendors that Gartner's customers reference in our interactions about mobile BI: Enterprise Signal, Exxova and MeLLmo.

Critical Capabilities Rating

Each product that meets our inclusion criteria has been evaluated on a scale of 1.0 to 5.0, with 1.0 being the lowest score and 5.0 the highest score (see Table 2).
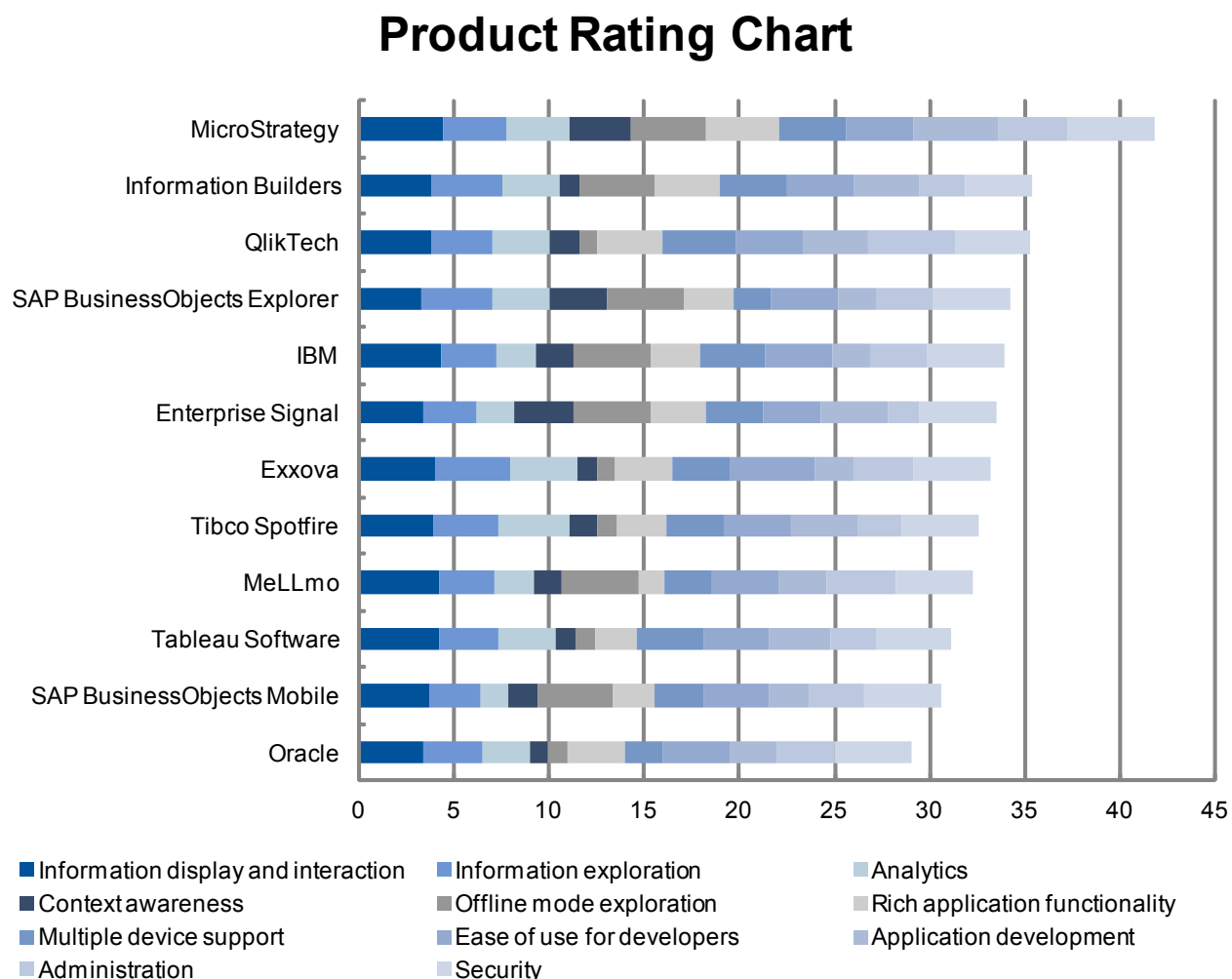
Table 2. Product Rating on Critical Capabilities

Product Rating	Enter-prise Signal	Exxo-va	IBM	Informa-tion Builders	MeLLmo	Micro-Strategy	Oracle	Qlik-Tech	SAP Busines-sObjects Explorer	SAP Busines-sObjects Mobile	Tableau Soft-ware	Tibco Spotfire
Information display and interaction	3.4	4.0	4.3	3.8	4.2	4.5	3.4	3.8	3.3	3.7	4.2	3.9
Information exploration	2.8	4.0	3.0	3.8	3.0	3.3	3.1	3.3	3.8	2.7	3.2	3.5
Analytics	2.0	3.5	2.0	3.0	2.0	3.3	2.5	3.0	3.0	1.5	3.0	3.7
Context awareness	3.1	1.0	2.0	1.0	1.5	3.2	1.0	1.5	3.0	1.5	1.0	1.5
Offline mode explora-tion	4.0	1.0	4.0	4.0	4.0	4.0	1.0	1.0	4.0	4.0	1.0	1.0
Rich application func-tionality	3.0	3.0	2.6	3.4	1.4	3.8	3.0	3.4	2.6	2.2	2.2	2.6
Multiple device sup-port	3.0	3.0	3.5	3.5	2.5	3.5	2.0	3.8	2.0	2.5	3.5	3.0
Ease of use for devel-opers	3.0	4.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Application develop-ment	3.5	2.0	2.0	3.5	2.5	4.5	2.5	3.5	2.0	2.0	3.2	3.5
Administration	1.7	3.2	3.0	2.3	3.7	3.7	3.0	4.5	3.0	3.0	2.3	2.3
Security	4.0	4.0	4.0	3.5	4.0	4.5	4.0	4.0	4.0	4.0	4.0	4.0

Source: Gartner (April 2012)

To determine an overall score for each product in the use cases, the ratings in Table 2 are multiplied by the weightings shown in Table 1. These scores are shown in Figure 1.

Figure 1. Overall Score for Each Vendor's Product Based on the Non-Weighted Score for Each Critical Capability

Product Rating Chart

Legend:
- Information display and interaction
- Information exploration
- Analytics
- Context awareness
- Offline mode exploration
- Rich application functionality
- Multiple device support
- Ease of use for developers
- Application development
- Administration
- Security

Source: Gartner (April 2012)

Table 3. Product Score in Use Cases

Use Cases	Enter-prise Signal	Exxo-va	IBM	Informa-tion Builders	MeLLmo	Micro-Strategy	Oracle	Qlik-Tech	SAP Busines-sObjects Explorer	SAP Busines-sObjects Mobile	Tableau Software	Tibco Spotfire
Overall	3.2	3.3	3.4	3.4	3.2	3.9	2.8	3.3	3.3	3.1	3.1	3.1
BI content mo-bilization	3.1	3.8	3.5	3.5	3.5	3.8	3.2	3.5	3.4	3.3	3.4	3.4
Management dashboards	3.2	3.5	3.6	3.4	3.4	4.0	3.0	3.5	3.3	3.2	3.4	3.4
Field workers' reporting	3.2	2.9	3.3	3.3	3.1	3.9	2.6	3.1	3.2	3.0	2.7	2.8
Mobile analytics	2.9	3.4	3.0	3.3	2.9	3.7	2.8	3.3	3.3	2.7	3.1	3.3
Mobile BI appli-cations	3.3	3.0	3.1	3.4	3.0	4.0	2.8	3.5	2.9	2.8	3.2	3.2
BI = business intelligence												

Source: Gartner (April 2012)

Product Viability

Product viability is distinct from the critical capability scores for each product. It is our assessment of the vendor's strategy and the vendor's ability to enhance and support a product throughout its expected life cycle; it is not an evaluation of the vendor as a whole. Four major areas are considered: strategy, support, execution and investment. Strategy includes how a vendor's strategy for a particular product fits in relation to the vendor's other product lines, its market direction and its business overall. Support includes the quality of technical and account support, as well as customers' experiences with that product. Execution considers a vendor's structure and processes for sales, marketing, pricing and deal management. Investment considers the vendor's financial health and the likelihood of the individual business unit responsible for a product to continue investing in it. Each product is rated on a five-point scale from poor to outstanding for each of these four areas, and it is then assigned an overall product viability rating (see Table 4).
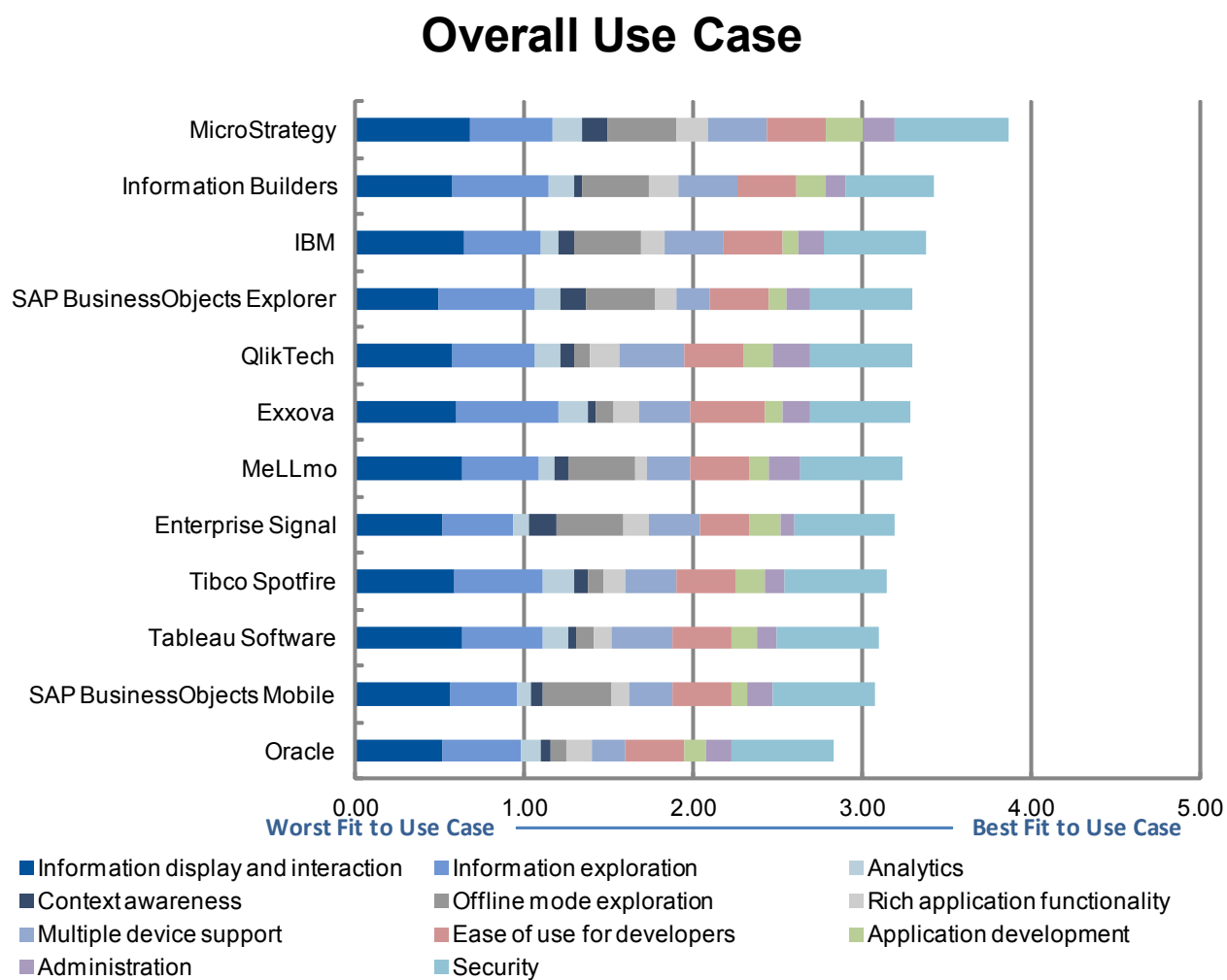
Table 4. Product Viability Ratings

Vendor/ Product Name	Enter- prise Signal	Exxova	IBM	Informa- tion Build- ers	MeLLmo	Micro- Strategy	Oracle	Qlik- Tech	SAP Busi- ness-Ob- jects Ex- plorer	SAP Busi- ness-Ob- jects Mo- bile	Tableau Soft- ware	Tibco Spotfire
Product Vi- ability	Fair	Good	Excel- lent	Excellent	Excellent	Outstand- ing	Good	Excel- lent	Excellent	Excellent	Good	Good

Source: Gartner (April 2012)

The weighted capabilities scores for all use cases are displayed as components of the overall score (see Figures 2 to 7).

Figure 2. Vendors' Product Scores for Overall Use Case

Overall Use Case

As of April 2012
The weighted capabilities scores for all use cases are displayed as components of the overall score.

Source: Gartner (April 2012)

Figure 3. Vendors' Product Scores for BI Content Mobilization Use Case

BI Content Mobilization Use Case

Legend:
- ■ Information display and interaction
- ■ Information exploration
- ■ Analytics
- ■ Context awareness
- ■ Offline mode exploration
- ■ Rich application functionality
- ■ Multiple device support
- ■ Ease of use for developers
- ■ Application development
- ■ Administration
- ■ Security

X-axis: 0.00 — 1.00 — 2.00 — 3.00 — 4.00 — 5.00
Worst Fit to Use Case ——— Best Fit to Use Case

Vendors (top to bottom): Exxova, MicroStrategy, IBM, Information Builders, QlikTech, MeLLmo, Tableau Software, SAP BusinessObjects Explorer, Tibco Spotfire, SAP BusinessObjects Mobile, Oracle, Enterprise Signal
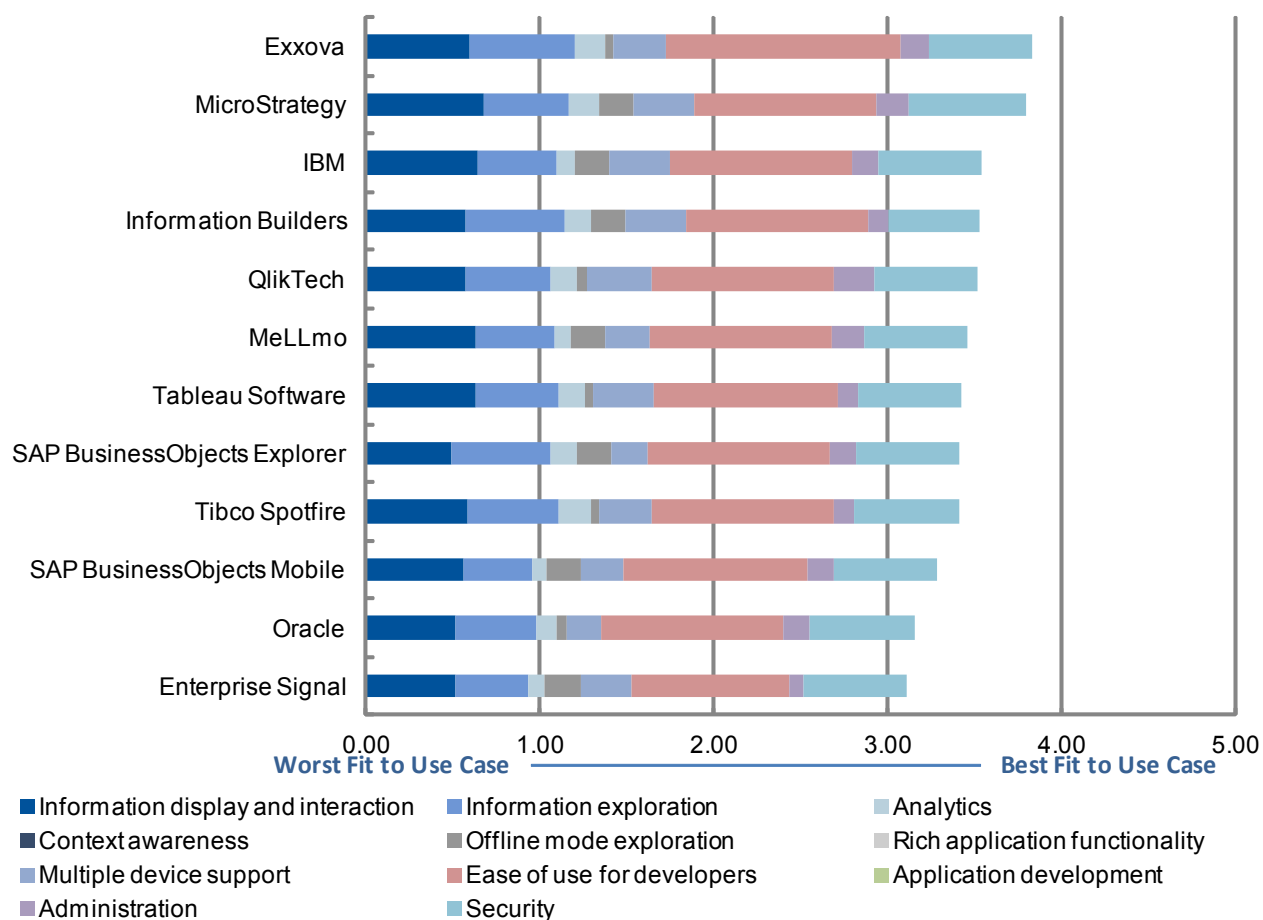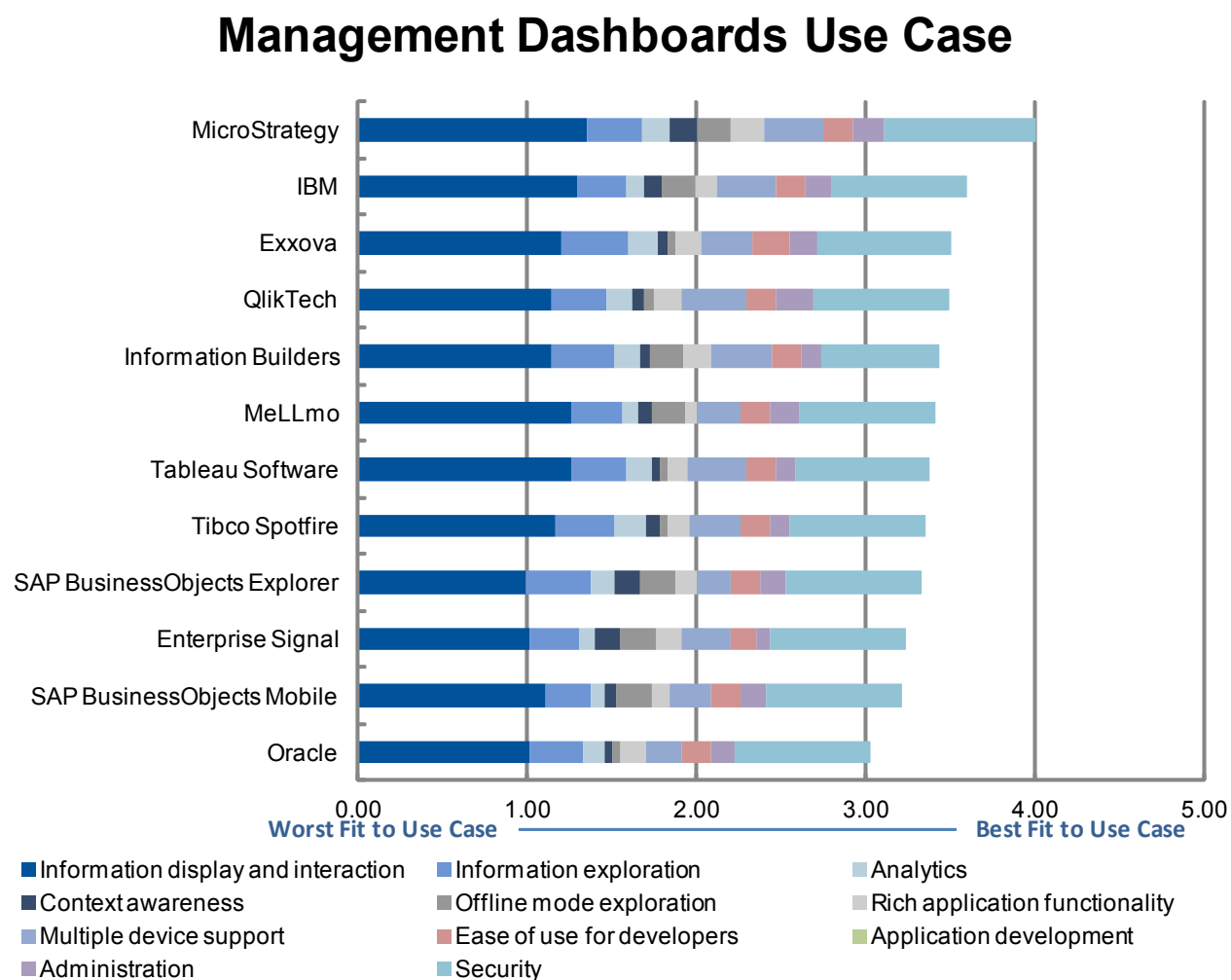
BI = business intelligence
As of April 2012
The weighted capabilities scores for all use cases are displayed as components of the overall score.

Source: Gartner (April 2012)

Figure 4. Vendors' Product Scores for BI Management Dashboards Use Case

Management Dashboards Use Case

BI = business intelligence
As of April 2012
The weighted capabilities scores for all use cases are displayed as components of the overall score.

Source: Gartner (April 2012)
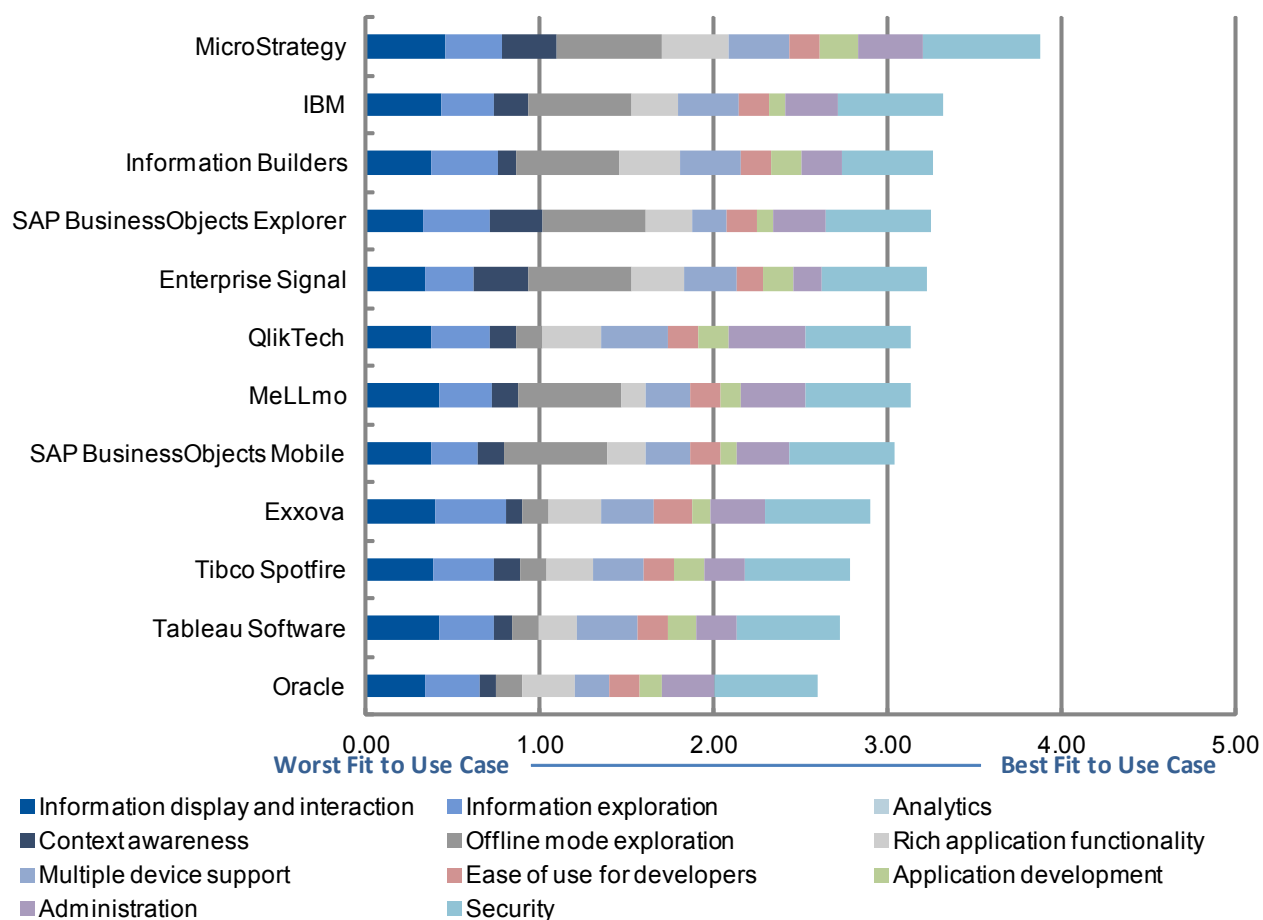
Field Workers Reporting Use Case

As of April 2012
The weighted capabilities scores for all use cases are displayed as components of the overall score.

Source: Gartner (April 2012)

Figure 6. Vendors' Product Scores for Mobile Analytics Use Case

Mobile Analytics Use Case

Worst Fit to Use Case — Best Fit to Use Case

Legend:
- Information display and interaction
- Information exploration
- Analytics
- Context awareness
- Offline mode exploration
- Rich application functionality
- Multiple device support
- Ease of use for developers
- Application development
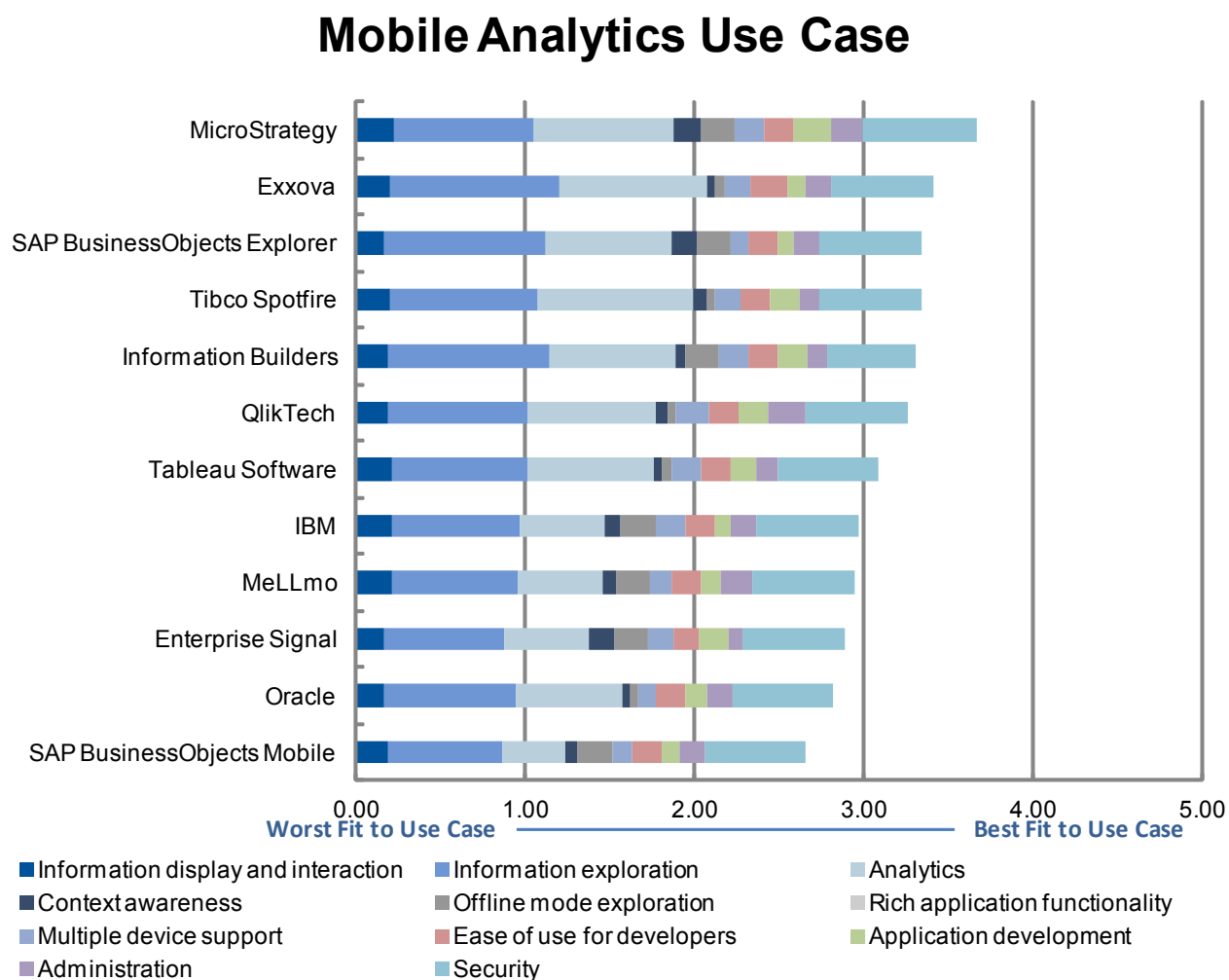- Administration
- Security

As of April 2012
The weighted capabilities scores for all use cases are displayed as components of the overall score.

Source: Gartner (April 2012)

Figure 7. Vendors' Product Scores for Mobile BI Applications Use Case

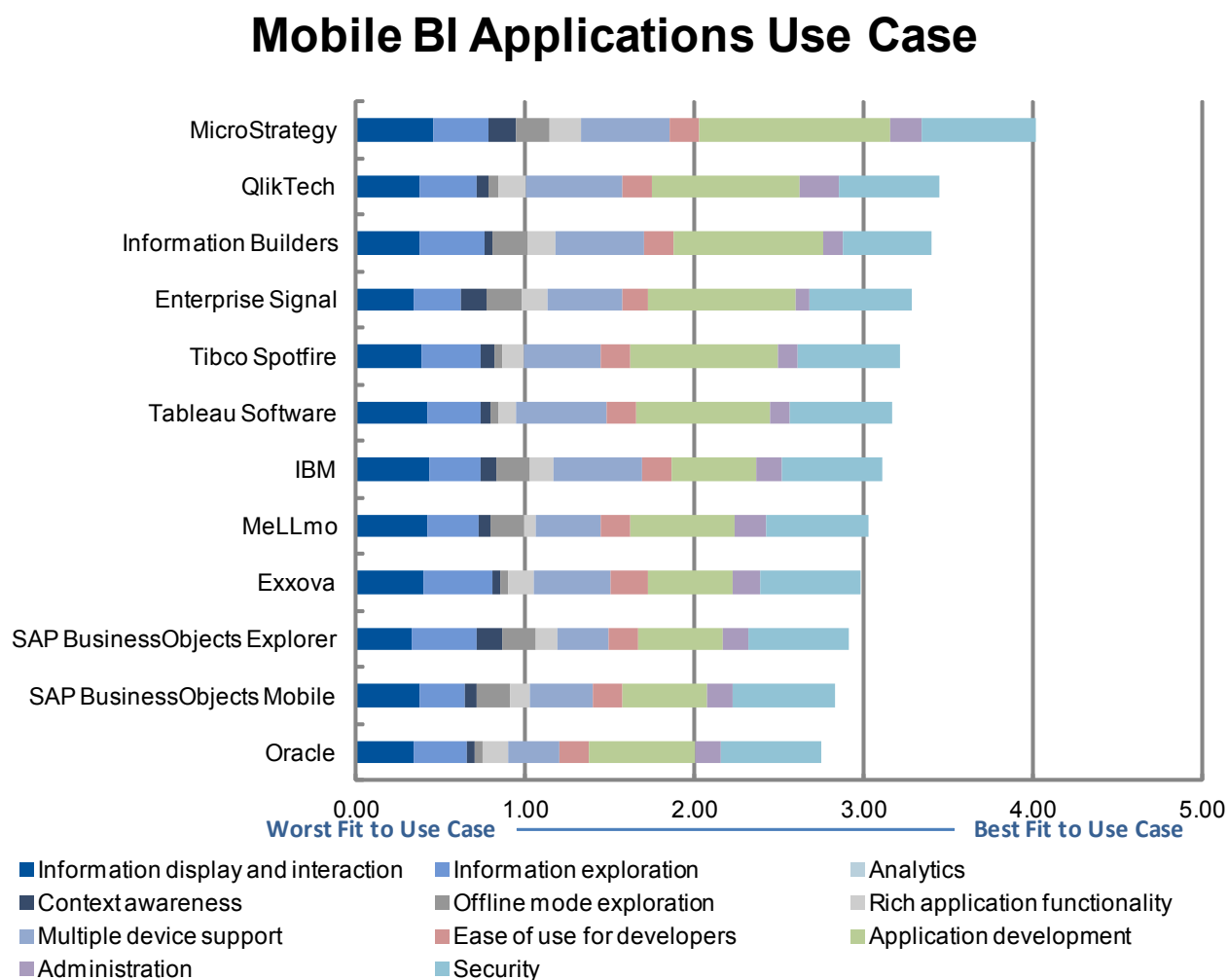# Mobile BI Applications Use Case

BI = business intelligence
As of April 2012
The weighted capabilities scores for all use cases are displayed as components of the overall score.

Source: Gartner (April 2012)

Vendors

Enterprise Signal

SurfBI

Enterprise Signal delivers SurfBI, a native application for Apple iOS and Google Android devices, which can be used for two different purposes: the quick mobilization of Oracle BI content, using a two-step conversion wizard; or the development of customized mobile dashboards, from a number of data sources such as IBM Cognos and SAP BusinessObjects data universes. The capability to add information widgets on top of background images, such as a number of products sold per section on top of a retail store plant, can create easy to use and engaging solutions for a broad range of field workers. Coupled with the write-back features available in SurfBI, and Enterprise Signal's support for customization, this could be a viable option for BI integration with business applications and processes.

Strengths: Enterprise Signal is a vendor willing to work on customers' specialized implementations, adding value to SurfBI that some organizations will recognize and require. The mobilization of Oracle BI content, migrating it to native content on iOS and Android devices, is also a benefit that could be leveraged by Oracle Business Intelligence Enterprise Edition (OBIEE) customers.

Areas of improvement: SurfBI won't satisfy every need in terms of dashboard development, as organizations searching for flexibility in BI outputs will be hampered by a limited number of predefined design templates, which clearly reduce customers' options. The Oracle migration process also needs additional management effort, because SurfBI copies the source metadata but won't refresh automatically in case of changes in OBIEE.

End users' capabilities: SurfBI has a reasonable number of graphic visualizations, such as bar, line, bubble, waterfall and scatter charts, but presents them in predefined grid formats (such as two by two), reducing the visual impact and constraining dashboard design capabilities. The available maps, without street-level detail, add basic geographic representations of data that will be enough for some organizations, but which will fall short for more demanding location-focused reports. The tool delivers a fair level of touchscreen interactivity and has a responsive user interface.

The availability of several mobile packaged analytics solutions in areas such as CRM, service management and manufacturing will deliver a quick start for some implementations and should be evaluated with the base mobile BI tool.

End users can easily activate disconnected mode, and the tool will download reports in the background while users navigate the application.

Enterprise Signal is investing effort into taking SurfBI to what can be considered today as niche use cases that will use a camera to filter a report based on a bar code, or search using voice commands. More appealing to a broader audience will be the capability to integrate with operational applications, through write-back to an order system (for example) after a user reviews product stocks on a dashboard (see Table 5).

Table 5. Enterprise Signal's Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and interaction	Rich information visualization	OO
	Information overlay on maps	OO
	Touchscreen experience	OO
	Responsiveness	OOO
	Dashboard delivery	OOO
Information exploration	Guided information exploration	OOO
	Table manipulation	OO
	Graphics manipulation	OO
	Map manipulation	OO
	Report development on the device	-
Analytics	Ad hoc information exploration	-
	Packaged analytics	OOO
	Scenario simulations	-
	Analytic model development	-
Context awareness	GPS integration	OOO
	Camera integration	OOO
	Voice integration	OO
	Sensor integration	-
Offline mode exploration	Offline information navigation	OOO
	Automated information download	OOO
	Manual information download	OOO
Rich application functionality	Collaboration	OO

	Alerting	-
	Write-back	OOO
	Multimedia support	OOO
	Augmented reality	-
Multiple device support	Apple	OOO
	Google	OOO
	RIM	-
	Microsoft	-
RIM = Research In Motion Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

Developers' and administrators' capabilities: SurfBI is an easy and quick solution to mobilize Oracle BI reports. The process migrates report definitions and leverages user definitions and security restrictions, effectively transforming Web-based outputs in a native BI application to be mobile-friendly. A new platform addition to manage is always a burden to a busy IT team. Making this Java-based software that can run on an application server in the company will minimize the impact and required effort (see Table 6).

Table 6. Enterprise Signal's Support for Developers' and Administrators' Capabilities

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	-
	Reuse of existing content	OO
	New content development	OO
	Cross-BI platform integration	OO
Application development	Mobile application integration	OOO
	Application customization	OO
	Application distribution	OOO
	Development SDK	OO
Administration	Integrated mobile infrastructure	OO
	Administrator-driven setup	-
	Application management	-
Security	Communications security	OO
	Data security	OO
	Application security	OOO
	BI objects and user security	OOO
BI = business intelligence, SDK = software development kit
Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

Exxova

MyBI

MyBI, a native application for iPad and Android tablets, takes a different approach to mobile BI when compared with most of the solutions on the market. It relies on existing BI platforms such as those from SAP or Oracle to generate the BI content, and, through Exxova's Mobile Access Server, it interprets the objects destined for a desktop PC and renders them on the mobile's native application, including HTML5 and rich Web frameworks (Adobe Flash and Flex). This solution

shares similarities with desktop virtualization tools, like XenDesktop from Citrix, but goes further than streaming screen outputs to the device and returning touch commands to the server. It understands how the BI platform operates, and leverages operational metadata, user definitions and security to improve the user experience, creating a native skin on top of the original Web outputs, with aids such as a quick access panel to favorite reports or a mini map to quickly pan and zoom a dashboard.

Strengths: MyBI acts as a virtual BI platform, aggregating information from SAP and Oracle BI tools (support for Microsoft will become available in the near future), and delivering it on mobile devices. This is a benefit for companies with several BI platforms that don't want to deploy different mobile BI solutions from their incumbent vendors. Even with only one platform deployed in the organization, this solution can still generate value by immediately mobilizing all the existing BI content and capabilities, without any rewrites, including consumption of Flash-based Xcelsius dashboards on iPads.

Areas of improvement: Exxova has technology to tap into the content generation engines of SAP and Oracle and to isolate the presentation layer that will be handled on the mobile device. Although mitigated by the openness trends we see in the market, the connection to Oracle and SAP could represent a risk if these vendors decide to change or close the platform to external applications. In terms of the product's capabilities, the most relevant drawback is the fact that the source BI platform will be completely unaware of mobility, generating desktop BI content which can include scroll bars, small checkboxes or right-click menus, for example. Some content will look displaced and will be difficult to navigate on the mobile device, needing a design update to improve the user experience.

End users' capabilities: MyBI can leverage rich visualizations developed for the desktop. It can display engaging visual components to provide graphic animations as sophisticated as a spinning globe, like Google Earth, with KPIs on the surface. Maps are also fully supported, in all the detail that the source platforms can provide. Rendered objects inherit the desktop's properties and can provide interactive layouts, and the system is able to leverage mobile-specific touch commands (like swipe to pan) and seamlessly merge them with desktop activities such as drag and drop or simulated "right mouse button clicks" to access context menus. Interface responsiveness depends on fast communications to deliver a satisfying experience. MyBI tries to solve the problem of minimizing round-trip activities by handling heavy processing activities on the server and leveraging the native application on the device whenever possible, keeping communications to a minimum.

Information exploration includes all the capabilities from the source platforms (like SAP BusinessObjects Explorer or Oracle Hyperion), such as guided navigation, filtering, drilling or even drag and drop, to build a new report or ad hoc query against an online analytical processing (OLAP) cube.

Offline mode is not an option, as the tool relies fully on server operation to be able to get content from the source BI platform.

GPS integration also won't be available because this is a mobile-specific capability, but other rich application functionality (such as collaboration or multimedia) is supported (see Table 7).

Table 7. Exxova's Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and interaction	Rich information visualization	OOO
	Information overlay on maps	OOO
	Touchscreen experience	OO
	Responsiveness	OO
	Dashboard delivery	OOO
Information exploration	Guided information exploration	OOO
	Table manipulation	OOO
	Graphics manipulation	OOO
	Map manipulation	OOO
	Report development on the device	OOO
Analytics	Ad hoc information exploration	OOO
	Packaged analytics	OO
	Scenario simulations	OOO
	Analytic model development	-
Context awareness	GPS integration	-
	Camera integration	-
	Voice integration	-
	Sensor integration	-
Offline mode exploration	Offline information navigation	-
	Automated information download	-
	Manual information download	-
Rich application functionality	Collaboration	OO

	Alerting	OO
	Write-back	OO
	Multimedia support	OOO
	Augmented reality	-
Multiple device support	Apple	OOO
	Google	OOO
	RIM	-
	Microsoft	-

RIM = Research In Motion
Key: "OOO" = full support, "OO" = partial support, "–" = not supported

Source: Gartner (April 2012)

Developers and administrators' capabilities: Leveraging existing BI content with MyBI doesn't require any mobile development effort, as the creation of new content is done on the source platform. However, if the organization wants to optimize the mobile user experience, it has to design for a different screen form factor, and be aware that a touchscreen will be used to make selections and apply filters.

BI administration becomes more complex with mobile BI, because there is an additional system to administer. MyBI helps by leveraging existing user and security definitions, and by having basic capabilities for semi-automated application deployment and device authorization. Still, the use of a mobile device management platform is highly recommended (see Table 8).

Table 8. Exxova Developers' and Administrators' Capabilities support

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	OOO
	Reuse of existing content	OOO
	New content development	OOO
	Cross-BI platform integration	OOO
Application development	Mobile application integration	-
	Application customization	-
	Application distribution	OOO
	Development SDK	-
Administration	Integrated mobile infrastructure	OO
	Administrator-driven setup	OO
	Application management	OO
Security	Communications security	OO
	Data security	OOO
	Application security	OOO
	BI objects and user security	OOO
BI = business intelligence, SDK = software development kit Key: "OOO" = full support, "OO" = partial support, "–" = not supported		

Source: Gartner (April 2012)

IBM

IBM Cognos Mobile

IBM Cognos Mobile for the iPad is a native application tightly integrated with the Cognos infrastructure, leveraging content, development effort and security definitions. It's currently focused on delivering BI dashboards, exploring Active Reports capabilities, which allow a portable and disconnected exploration of information. Given the broad range of offerings from IBM under the Business Analytics umbrella, Gartner expects to see, in the future, an evolution to a wider scope of

mobile capabilities, including advanced analytics and performance management. This will differentiate IBM's solutions from the single-focus players, and will increase its appeal to customers starting mobile projects.

Strengths: The main strengths of Cognos Mobile are targeted at IBM's existing customer base, with a seamless integration into the BI platform and a shared authoring effort for desktop and mobile devices. Beyond that, the set of available mobile capabilities is robust and a credible solution for dashboard deployment, especially if disconnected information navigation — another strength of the product — is a requirement. IBM's bold and continued investment in the areas of BI, analytics and performance management is also a reassurance that the mobile solution will evolve to deliver more functionality in the future.

Areas of improvement: IBM Cognos Mobile's mapping capabilities need to improve, to provide better exploration of geographic information and to better leverage the GPS integration. Write-back capabilities, coupled with tools to develop customized mobile BI applications (namely a mobile application SDK), would also allow for more advanced use cases. Finally, although Cognos Mobile can be integrated with mobile device management tools for application deployment and management, it would benefit from an automated setup, through configuration profiles emailed to the user.

End users' capabilities: Cognos Mobile provides flexible dashboard design options that can deliver engaging results. The available components are visually effective and suitable for mobile usage with optimizations such as large fonts, tap-friendly selectors and enlarged pop-ups for displaying charts. Maps are provided (albeit with limited capabilities in terms of their detail and exploration options), allowing the overlay of information. The user interface could sometimes provide better interactivity in graphics, such as tapping to display information detail, but the issue is overcome through useful information navigation capabilities, stacked tables or pop-up windows with details, for example. The tool benefits from being a native application offering a responsive user experience and making good use of the touchscreen interface.

Information exploration capabilities have the required depth for regular business users, and the navigation to detail is friendly enough to appeal to technology-savvy users, such as a typical CFO or line of business manager.

Power users that need broad analytic capabilities, such as ad hoc querying or predictive modeling, won't be able to use Cognos Mobile. An additional benefit from using an IBM product is its ability to mobilize some of the available packaged analytic offerings. These aren't mobile-specific, but some could be used in this environment.

IBM Cognos is currently supporting iPad and BlackBerry phones with native applications, but it also has a Web-based solution for Android, BlackBerry PlayBook and iPhone mobile devices. Gartner expects a native application to be available for Android, following development road map trends we've seen in the market from other vendors (see Table 9).

Table 9. IBM's Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and Interaction	Rich information visualization	OOO
	Information overlay on maps	OO
	Touchscreen experience	OOO
	Responsiveness	OOO
	Dashboard delivery	OOO
Information exploration	Guided information exploration	OOO
	Table manipulation	OO
	Graphics manipulation	OO
	Map manipulation	OO
	Report development on the device	-
Analytics	Ad hoc information exploration	-
	Packaged analytics	OO
	Scenario simulations	-
	Analytic model development	OO
Context awareness	GPS integration	OOO
	Camera integration	-
	Voice integration	-
	Sensor integration	-
Offline mode exploration	Offline information navigation	OOO
	Automated information download	OOO
	Manual information download	OOO
Rich application functionality	Collaboration	OO

	Alerting	OO
	Write-back	-
	Multimedia support	OOO
	Augmented reality	-
Multiple device support	Apple	OOO
	Google	OOO
	RIM	OOO
	Microsoft	OO
RIM = Research In Motion Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

Developers and administrators' capabilities: IBM provides capabilities to deliver existing desktop Cognos BI content through mobile devices, leveraging the development workbench and existing designer skills.

Administration is also eased by the use of the existing platform, although it benefits from the addition of an external mobile device management platform to support device management and application deployment and management.

Application customization and integration, such as integrating a sales dashboard with order entry forms to replenish stocks, is not yet an option in native mode, as no SDK is available, although the Web-based solution could be used with customization to achieve the same goal (see Table 10).

Table 10. IBM's Support for Developers' and Administrators' Capabilities

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	OOO
	Reuse of existing content	OOO
	New content development	OOO
	Cross-BI platform integration	-
Application development	Mobile application integration	-
	Application customization	-
	Application distribution	OO
	Development SDK	-
Administration	Integrated mobile infrastructure	OOO
	Administrator-driven setup	-
	Application management	-
Security	Communications security	OOO
	Data security	OO
	Application security	OOO
	BI objects and user security	OOO
BI = business intelligence, SDK = software development kit Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

Information Builders

WebFOCUS Mobile

Information Builders offers Web-based BI content in the form of Active Technologies, which can be used offline in any browser. To improve the iOS experience, a native application (called Mobile Faves) has been added, which acts as a Web content management tool on Apple devices, making this a hybrid solution — a native container rendering Web content. In all other mobile platforms apart from Apple, BI content will be available using a pure Web solution.

The purpose is to create a single authoring process for consumption on every device type — desktop or mobile — but to still provide functionality native to the platform they run on (for example, point and click and pull-down menus on a desktop and larger tap and swipe options on mobile touchscreens). This should solve some of the typical drawbacks of Web content, including offline mode navigation and interactivity for information exploration, providing an experience that, although still Web-based, is closer to native than most other solutions.

Strengths: The main strengths of Mobile Faves, apart from the single authoring effort, are in its information exploration capabilities, directly derived from the desktop solution. An end user, on a mobile device, will be able to interact with tables, sorting, creating new metrics, filtering, aggregating or pivoting and changing calculations as needed. The offline navigation mode that can be used by some content is also relevant to many users.

Areas of improvement: One drawback of this tool is the experience users have while navigating the information — it's a Web-based solution and that can be seen in the touchscreen experience, which will sometimes look awkward to users of mobile devices. GPS integration is also unavailable, so maps can be used to display information but won't be enhanced by location awareness from the device.

End users' capabilities: Mobile Faves leverages a comprehensive number of visual components from the desktop BI solution. Animations are preserved, but so is some of the Web look and feel from the original platform, which can hamper the mobile experience.

Many of the visualizations and tables are interactive, with detailed pop-ups, chart reformatting and even the capability to change displayed metrics. Users can improve the responsiveness of the interface by downloading the content to the device, and by being able to work without round trips to the server, delivering, on this case, a close to native experience. An additional offline exploration mode is based on Information Builders' Active Reports technology, which allows Web-based files to be sent via email and to be consumed on the mobile device.

With the right dashboard design, Information Builders is able to offer a wide range of information exploration capabilities to mobile device users. Although it cannot replace advanced analytical processes on a desktop PC, it will be enough to cover most needs of users on the go.

Multiple device support must also be highlighted as a flagship objective in the area of mobility for Information Builders. Organizations with this requirement high on their list of priorities should evaluate this solution (see Table 11).

Table 11. Information Builders' Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and interaction	Rich information visualization	OO
	Information overlay on maps	OOO
	Touchscreen experience	OO
	Responsiveness	OO
	Dashboard delivery	OOO
Information exploration	Guided information exploration	OOO
	Table manipulation	OOO
	Graphics manipulation	OOO
	Map manipulation	OOO
	Report development on the device	OO
Analytics	Ad hoc information exploration	OOO
	Packaged analytics	-
	Scenario simulations	OO
	Analytic model development	OO
Context awareness	GPS integration	-
	Camera integration	-
	Voice integration	-
	Sensor integration	-
Offline mode exploration	Offline information navigation	OOO
	Automated information download	OOO
	Manual information download	OOO
Rich application functionality	Collaboration	OO

	Alerting	OO
	Write-back	OOO
	Multimedia support	OOO
	Augmented reality	-
Multiple device support	Apple	OOO
	Google	OO
	RIM	OO
	Microsoft	OO
RIM = Research In Motion Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

Developers and administrators' capabilities: For developers and BI system administrators, Mobile Faves is a welcome option, bearing in mind the strategic objective of delivering a similar experience across platforms — existing design skills will be fully leveraged, in the same BI infrastructure, using the same administration processes. The BI infrastructure will only be disturbed by the native application deployment and management processes that will require the use of the mobile device management tools for large-scale installations (see Table 12).

Table 12. Information Builders' Support for Developers' and Administrators' Capabilities

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	OOO
	Reuse of existing content	OOO
	New content development	OOO
	Cross-BI platform integration	-
Application development	Mobile application integration	OOO
	Application customization	OOO
	Application distribution	OOO
	Development SDK	OO
Administration	Integrated mobile infrastructure	OOO
	Administrator-driven setup	-
	Application management	-
Security	Communications security	OO
	Data security	OO
	Application security	OOO
	BI objects and user security	OOO
BI = business intelligence, SDK = software development kit Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

MeLLmo

Roambi Analytics

MeLLmo, a startup company focused on the mobilization of information, develops Roambi Analytics, a native application for the iPhone and the iPad. The product is recognized by most companies investigating mobile BI due to its high visual impact, its ease of use and its ability to mobilize BI content from several platforms, including IBM Cognos, Microsoft Reporting Services, Microsoft Analysis Services, Oracle BI and SAP BusinessObjects Web Intelligence and Crystal

Reports. The company makes Roambi Lite available for personal use. Users can subscribe for an account at the company's website, download the application from Apple's App Store, and experience the mobile solution by uploading Excel-based data to a cloud service. This has helped to spread the word in the consumer market and, consequently, to companies that employ users that have downloaded it. Public exposure, due to the volume of downloads and good ratings in the App Store, also explain the product's market awareness, which is far larger than the company's size would suggest.

Strengths: Roambi Analytics' greatest strengths are the engaging and easy to use interface, coupled with an easy interface to plug into BI platform reports. This is a step up from the more common access to a data layer, allowing for the transformation of traditional static reports into interactive outputs on a mobile device. It uses only nine visualizations in the latest ES4 release, but its impact on BI users is high. They appreciate the product's simplicity and, at the same time, the possibility of navigating, filtering and interacting with their information in an engaging way.

Areas of improvement: There's usually a trade-off between simplicity and depth of usage. By having such a simple tool, the amount of capabilities and its customization options are low and may not fit every need. While keeping each visualization easy to use, Roambi Analytics would benefit from additional engaging information visualizations, including maps (which are absent from the current solution). The need for additional development effort to mobilize existing BI reports, although small for each one, is also an issue that will prevent some customers from adopting the tool.

End users' capabilities: The tool makes good use of the touchscreen interface and leaves no traces of the underlying BI platform behavior or user interface — the experience is fully mobile. Its seamless offline mode helps in the delivery of a responsive operation, and opens the opportunity for new use cases. Even so, the solution is hampered by the lack of location awareness capabilities (which would mean integration with the GPS), and by some limitations in its information exploration capabilities, like the option of selecting an item on a table and having a linked chart filtered.

Analytics is an area where Roambi also needs to improve to appeal to a broader audience. The newest release (ES4) added two new visualizations: "layers" and "squares," which provide some depth to the ad hoc exploration of information, slightly reducing the gap in this area (see Table 13).

Table 13. MeLLmo's Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and interaction	Rich information visualization	OOO
	Information overlay on maps	-
	Touchscreen experience	OOO
	Responsiveness	OOO
	Dashboard delivery	OOO
Information exploration	Guided information exploration	OO
	Table manipulation	OOO
	Graphics manipulation	OOO
	Map manipulation	-
	Report development on the device	-
Analytics	Ad hoc information exploration	OO
	Packaged analytics	-
	Scenario simulations	-
	Analytic model development	-
Context awareness	GPS integration	-
	Camera integration	-
	Voice integration	-
	Sensor integration	OO
Offline mode exploration	Offline information navigation	OOO
	Automated information download	OOO
	Manual information download	OOO
Rich application functionality	Collaboration	OO

	Alerting	-
	Write-back	-
	Multimedia support	-
	Augmented reality	-
Multiple device support	Apple	OOO
	Google	-
	RIM	OO
	Microsoft	-

RIM = Research In Motion
Key: "OOO" = full support, "OO" = partial support, "-" = not supported

Source: Gartner (April 2012)

Developers' and administrators' capabilities: Roambi developers don't have difficult or lengthy tasks to perform, but they still need to invest effort in each report that needs to be ported to the mobile device. Additionally, BI system administrators will need to take care of a new platform, although it is able to leverage existing security and user definitions, and is capable of helping in the deployment of the application through an automated configuration Web link (see Table 14).

Table 14. MeLLmo's Support for Developers' and Administrators' Capabilities

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	-
	Reuse of existing content	OO
	New content development	OO
	Cross-BI platform integration	OOO
Application development	Mobile application integration	OO
	Application customization	OO
	Application distribution	OO
	Development SDK	-
Administration	Integrated mobile infrastructure	OO
	Administrator-driven setup	OO
	Application management	OOO
Security	Communications security	OOO
	Data security	OO
	Application security	OOO
	BI objects and user security	OOO
BI = business intelligence, SDK = software development kit Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

MicroStrategy

MicroStrategy Mobile

MicroStrategy has been investing heavily in mobility, and this is clearly reflected in its product: a mature and broad-scope mobile BI solution. MicroStrategy Mobile has native versions for iOS and Android devices, delivering the same level of functionality. While existing BI content can be consumed without needing any additional development effort, the solution delivers its full value when dashboards are redesigned to leverage mobile capabilities, including a touch-friendly

interface, offline mode navigation, GPS integration and a rich gallery of information display components optimized for mobile usage.

Strengths: MicroStrategy provides the breadth of capability, seamless mobile device integration and engaging user experience that, if exploited properly, can foster BI adoption by new user constituencies. The possibility to develop native mobile BI applications to support custom scenarios is also a plus in more advanced BI environments. The tight integration with an existing MicroStrategy BI platform eases the development and administration support, but still provides plenty of options for mobile-specific optimization. Another benefit is that, looking at the product's track record for the past two years, we can see a stream of incremental innovation, with new versions frequently available on Apple's App Store for download.

Areas of improvement: MicroStrategy remains what can be called an "incumbent BI platform," which means that customers with BI solutions from other vendors, which want to deploy mobile BI (having selecting MicroStrategy Mobile as a solution), would need to implement its core BI infrastructure, instead of a simple mobile BI component. This will add a full-sized BI platform to the organization, with duplicated components and development effort, creating a new silo to support. For many, namely companies with larger BI deployments, it will be a clear indication that companies should look for a solution somewhere else, or wait for their vendor to deliver the required functionality. MicroStrategy is aware of this but, as a strategic goal, prefers to press on replacing competitors' BI platforms, rather than selling an isolated pure-play mobile BI product.

End users' capabilities: MicroStrategy users will recognize some of the visual components from the desktop solution, but the mobile experience adds new capabilities and an application-like experience, instead of simple dashboard distribution. It enables the creation of guided information exploration paths that can lead less experienced users to the information they need, as well as stacked layers of information that is actionable through swipe commands, zoomable maps, location awareness, multimedia content and, in an emergent use case, write-back capabilities to business applications.

By offering the capability to skin and customize applications, making them available in rebranded form on the App Store, MicroStrategy drives its partners to the business of creating packaged analytics applications. Using this capability, there are mobile-specific solutions available in the App Store — not just Web solutions that can run on a mobile device — in areas such as retail analytics or supply chain optimization.

Other analytics capabilities, such as ad hoc information exploration, are still an area where MicroStrategy's mobile solution could improve. The use of information filtering solutions, supported by data visualizations, delivers some degree of open question exploration, but there is room for impactful enhancements in future versions (see Table 15).

Table 15. MicroStrategy's Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and interaction	Rich information visualization	OOO
	Information overlay on maps	OOO
	Touchscreen experience	OOO
	Responsiveness	OOO
	Dashboard delivery	OOO
Information exploration	Guided information exploration	OOO
	Table manipulation	OO
	Graphics manipulation	OOO
	Map manipulation	OOO
	Report development on the device	-
Analytics	Ad hoc information exploration	OO
	Packaged analytics	OOO
	Scenario simulations	OO
	Analytic model development	OO
Context awareness	GPS integration	OOO
	Camera integration	OOO
	Voice integration	-
	Sensor integration	OO
Offline mode exploration	Offline information navigation	OOO
	Automated information download	OOO
	Manual information download	OOO
Rich application functionality	Collaboration	OO

	Alerting	OOO
	Write-back	OOO
	Multimedia support	OOO
	Augmented reality	-
Multiple device support	Apple	OOO
	Google	OOO
	RIM	OO
	Microsoft	-

RIM = Research In Motion
Key: "OOO" = full support, "OO" = partial support, "-" = not supported

Source: Gartner (April 2012)

Developers and administrators' capabilities: MicroStrategy Mobile developers leverage the tool's desktop development workbench, which provides additional customization options for the mobilization of traditional dashboards. The required effort for mobilization is low when compared with the effort to design and implement a standard dashboard from scratch, but it will still be relevant for some organizations.

Using the mobile SDK, MicroStrategy customers can develop their own applications, eventually integrating BI with other business applications, including write-back capabilities. Following the standard processes, these can be uploaded to public or private application stores with configuration settings predefined and ready to work on download (see Table 16).

Table 16. MicroStrategy's Support for Developers' and Administrators' Capabilities

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	OOO
	Reuse of existing content	OOO
	New content development	OOO
	Cross-BI platform integration	-
Application development	Mobile application integration	OOO
	Application customization	OOO
	Application distribution	OOO
	Development SDK	OOO
Administration	Integrated mobile infrastructure	OOO
	Administrator-driven setup	OO
	Application management	OO
Security	Communications security	OOO
	Data security	OOO
	Application security	OOO
	BI objects and user security	OOO

BI = business intelligence, SDK = software development kit
Key: "OOO" = full support, "OO" = partial support, "-" = not supported

Source: Gartner (April 2012)

Oracle

Oracle Mobile

Oracle released its first mobile BI product (Oracle Business Intelligence Mobile 11.1.1.5) in May 2011 as a response to competition, not as a first-to-market disruptive innovation. It utilizes a hybrid iOS application that renders the standard Web content in a native container, but the transition to mobility is yet to be fully achieved. As it has a static output that retains most of the look and behavior of the desktop, Gartner believes that the transition to mobility is yet to be fully achieved in

this current version. While it will provide a seamless transition to mobility for existing Oracle BI users, this could create an opportunity for other vendors highlighted in this report, which have richer and more engaging dashboard layouts, to be selected as a more desirable mobile front-end to Oracle's Business Intelligence platform, potentially rendering it a back-office engine. It's worth noting that the release and customer adoption of Oracle's second generation mobile BI client is likely to remedy this concern.

Strengths: Oracle BI Mobile can open OBIEE to the world of mobility without development effort or the burden of new platform administration, except for the devices' application setup and management. Existing reports and dashboards will be available in the standard folder structure, and user definitions are kept valid, making this a "plug and play" experience. BI leaders will be able to quickly address the demand for mobile BI without retraining users or developers. Another competitive advantage for Oracle is the ability to start workflows on business applications, allowing for use cases like creating a product order on the ERP system after reviewing sales on a mobile BI dashboard.

Areas of improvement: For some users, the simple capability to access their reports on a mobile device will deliver value and improve their performance, but others will ask for more, in areas such as the touchscreen experience, better map manipulation, more dynamic and visually rich components, offline mode navigation or application customization options. Oracle is aware of these needs, and a new Oracle BI Mobile release could prove to be a major step toward a better overall user experience.

End users' capabilities: Oracle designed the HTML rendering engine in the iOS application to deliver fidelity to the desktop version, but still added some enhancements to improve the mobile experience. A "Mobile Layout" option is available to render content in a single column, increasing the size and readability of each object. The report folders are accessible through an easy to navigate pop-up panel, which also provides search, alerts and access to favorites. Information navigation is fully online, and while this is useful in environments with intra-day data updates, or in dashboards accessing a large volume of information, it reduces responsiveness in the user interface (see Table 17).

Table 17. Oracle Mobile's Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and interaction	Rich information visualization	OO
	Information overlay on maps	OO
	Touchscreen experience	OO
	Responsiveness	OO
	Dashboard delivery	OOO
Information exploration	Guided information exploration	OOO
	Table manipulation	OO
	Graphics manipulation	OO
	Map manipulation	OOO
	Report development on the device	-
Analytics	Ad hoc information exploration	-
	Packaged analytics	OO
	Scenario simulations	OO
	Analytic model development	OO
Context awareness	GPS integration	-
	Camera integration	-
	Voice integration	-
	Sensor integration	-
Offline mode exploration	Offline information navigation	-
	Automated information download	-
	Manual information download	-
Rich application functionality	Collaboration	OO

	Alerting	OO
	Write-back	OOO
	Multimedia support	OO
	Augmented reality	-
Multiple device support	Apple	OOO
	Google	-
	RIM	-
	Microsoft	-
RIM = Research In Motion Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

Developers' and administrators' capabilities: There is no mandatory development effort needed to deploy Oracle BI Mobile. All the content will be made available, without modifications, with the server working behind the scenes to allow the correct rendering on mobile devices. Due to the current maturity of this BI tool, and to improve the user experience, designers should still review their dashboard layouts before having them available on smaller screens, using, whenever possible, larger fonts, charts and selectors. As developers will notice, this will sometimes be enough to transform a potentially bad user experience in a compelling business tool.

Mobile BI application development could be a distinctive feature for Oracle, due to the product portfolios it owns (such as Java), but that's not yet reflected in this product with a mobile-specific SDK or native integration capabilities. Nevertheless, the desktop solution allows some degree of application integration capabilities, which can be propagated through the Web rendering to the mobile solution (see Table 18).

Table 18. Oracle Mobile's Support for Developers' and Administrators' Capabilities

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	OOO
	Reuse of existing content	OOO
	New content development	OOO
	Cross-BI platform integration	-
Application development	Mobile application integration	-
	Application customization	OO
	Application distribution	OO
	Development SDK	OO
Administration	Integrated mobile infrastructure	OOO
	Administrator-driven setup	-
	Application management	OO
Security	Communications security	OO
	Data security	OOO
	Application security	OOO
	BI objects and user security	OOO
BI = business intelligence, SDK = software development kit Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

QlikTech

QlikView 11

QlikTech is the only company in this research still promoting a pure Web-based solution as its primary mobile BI tool, although an outdated native tool remains available on the Apple App Store. Instead of following the trend of investing in a native application for iOS devices, as other vendors did, QlikView 11 was recently updated with relevant Web-based improvements in areas such as navigation in overloaded dashboards, information exploration capabilities and collaboration, while

retaining the single authoring effort for desktop and mobile. The result of this strategy is a friendly platform for developers and system administrators, although it sometimes delivers Web-based outputs that can be harder to use than in the desktop solution, due to the limitations of the mobile device form factor and touchscreen interface.

Strengths: A simple link sent by email is all users need to access the system on a mobile device — making system administrators satisfied customers of QlikTech for the iPad — without the need for changes or configurations on the existing platform. The ability to use the same content across platforms including mobile devices will also satisfy business analysts and users, provided that the content is built or optimized with the devices' characteristics in mind, namely the screen size and touch interface.

Another area where QlikView shines compared with its competitors is collaboration — new features are available in the latest release, including the possibility of live screen sharing and collaboration that can be used to discuss the results of a dashboard with full interaction from all participants, over a regular Web meeting on desktop and mobile platforms.

Areas of improvement: Delivering a data discovery experience, using a touch interface and a 50% smaller screen, is a difficult challenge for QlikView. Regular desktop dashboards will be too small on the tablet device, making them hard to read and interact with — two key issues for the data discovery experience. The need for users to have a permanent data connection while they explore information is also an issue, leading to a less responsive interface that lags behind a fully native experience, although it is comparable with most of the hybrid solutions that continue to render HTML content.

End users' capabilities: QlikView brings all the visual components and associative querying capabilities to the mobile device, and adds several mobile-specific enhancements to appeal to users, such as a large and easy to use selector in charts, or a thumbnail view of dashboards (called Small Devices mode), which allows the selection of a single graphic or table component to be displayed at one time. Some issues remain, however: check boxes or filter lists tend to be too small — barely readable for some users — and are difficult to use with tap-based interaction.

Maps are supported in QlikView through options such as custom integration with Google Maps, which requires a separate license from Google if the usage volume is too high, or using extensions from QlikTech's partners. The increase in mobility in companies would be a good justification to have this capability implemented natively in QlikView in a future release, just as other vendors do, making partners specialize in advanced use cases that are not answered by QlikTech (see Table 19).

Table 19. QlikView's Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and interaction	Rich information visualization	OOO
	Information overlay on maps	OO
	Touchscreen experience	OO
	Responsiveness	OO
	Dashboard delivery	OOO
Information exploration	Guided information exploration	OOO
	Table manipulation	OO
	Graphics manipulation	OO
	Map manipulation	OO
	Report development on the device	-
Analytics	Ad hoc information exploration	OOO
	Packaged analytics	-
	Scenario simulations	OO
	Analytic model development	OO
Context awareness	GPS integration	-
	Camera integration	-
	Voice integration	-
	Sensor integration	OO
Offline mode exploration	Offline information navigation	-
	Automated information download	-
	Manual information download	-
Rich application functionality	Collaboration	OOO

	Alerting	OO
	Write-back	OO
	Multimedia support	OOO
	Augmented reality	-
Multiple device support	Apple	OOO
	Google	OOO
	RIM	OO
	Microsoft	OO
RIM = Research In Motion Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

Developers and administrators' capabilities: QlikView dashboard designers don't have technical requirements that force them to do any extra development to leverage dashboards on a mobile device. But some layout options taken while designing for the desktop — namely those overloading the screen with tables and charts — may need some rework. Developers must accept that usability on a smaller device is a mandatory requirement and, therefore, they must invest effort in the task. Administrators, on the other hand, will have the easiest task, without any major change to a previous standard installation (see Table 20).

Table 20. QlikView's Support for Developers' and Administrators' Capabilities

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	OOO
	Reuse of existing content	OOO
	New content development	OOO
	Cross-BI platform integration	-
Application development	Mobile application integration	OOO
	Application customization	OOO
	Application distribution	OOO
	Development SDK	OO
Administration	Integrated mobile infrastructure	OOO
	Administrator-driven setup	OOO
	Application management	OOO
Security	Communications security	OO
	Data security	OOO
	Application security	OOO
	BI objects and user security	OOO

BI = business intelligence, SDK = software development kit
Key: "OOO" = full support, "OO" = partial support, "-" = not supported

Source: Gartner (April 2012)

SAP

SAP is the only vendor represented in this report with two products. SAP BusinessObjects Explorer and SAP BusinessObjects Mobile address different use cases, as part of what will be a mobile BI suite from SAP, leveraging Sybase Unwired Platform capabilities to deliver common context and features such as alerting, collaboration and an SDK. This vision is still a work in progress and, in the current version, the tools clearly behave as separate offerings that can't be used seamlessly together.

SAP BusinessObjects Explorer

SAP BusinessObjects Explorer is presented as a native iOS application that allows users to freely explore a set of data, by choosing attributes and metrics to analyze, search, filter, aggregate and visualize information in tables and charts. There is no predefined dashboard layout or KPI list prepared by a report designer, but users will be able to save their own information views — the results of their information exploration exercises. This can be accomplished offline, as Explorer is able to cache the data universe on the mobile device, and so guarantee responsiveness for the analysis process. The application also includes an augmented reality mode in which it can lay data on top of a map or a video stream delivered by the device's camera. It's a unique capability within the vendors evaluated in this research, and can be useful to workers using mobile BI outdoors, for which location information is critical.

Strengths: Explorer's main strengths are the ad hoc navigation of data provided to users —starting, however, from a predefined dataset — and the simplicity of the analytic process. Tech-savvy users won't need to understand SQL to be able to create their own analyses and views of data. The offline mode on the native experience is also relevant, making the analytic process fluid and enjoyable.

Areas of improvement: The tool interface looks slightly outdated — the result of being the first mobile BI tool from SAP — and it would also benefit from having more visualization capabilities: not necessarily more chart types but, instead, the capability to have more graphs at a time on the screen to allow a better understanding of information. SAP is about to address these issues with the next version of Explorer, which is already being showcased in public through a demonstration application (SAP BusinessObjects Experience) available on Apple's App Store.

End users' capabilities: SAP BusinessObjects Explorer leverages touchscreen technology with a streamlined interface that business users will grasp quickly, although sometimes it is too shallow in terms of available options to interact with information. Users won't be able to have a dashboard view of their KPIs, or even a more operational reporting-like experience — Explorer is, in its current release, meant to support self-service ad hoc analysis, and attempts to deviate from this use case will face difficulties.

Context awareness is a unique capability in Explorer, with GPS, camera and compass leveraged to deliver augmented reality. Most companies will simply see it as an interesting technical experience, but it can deliver real value to users in the field if applied in the right use cases (see Table 21).

Table 21. SAP BusinessObjects Explorer's for iPad Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and interaction	Rich information visualization	OO
	Information overlay on maps	OOO
	Touchscreen experience	OOO
	Responsiveness	OOO
	Dashboard delivery	-
Information exploration	Guided information exploration	OO
	Table manipulation	OOO
	Graphics manipulation	OOO
	Map manipulation	OOO
	Report development on the device	OO
Analytics	Ad hoc information exploration	OOO
	Packaged analytics	OO
	Scenario simulations	-
	Analytic model development	-
Context awareness	GPS integration	OOO
	Camera integration	-
	Voice integration	-
	Sensor integration	OOO
Offline mode exploration	Offline information navigation	OOO
	Automated information download	OOO
	Manual information download	OOO
Rich application functionality	Collaboration	OO

	Alerting	OO
	Write-back	-
	Multimedia support	-
	Augmented reality	OOO
Multiple device support	Apple	OOO
	Google	-
	RIM	-
	Microsoft	-
RIM = Research In Motion Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

Developers and administrators' capabilities: As a consequence of the core product characteristics, there is no relevant development process associated with SAP BusinessObjects Explorer — users will invest the effort necessary to deliver their views of data. Adding mobility to this scenario will be transparent for developers. System administrators will have to handle deployment and management and, in what is becoming a common trend, they'll need to rely on a mobile device management platform or face a manual setup process with the support of Apple's App Store capabilities (see Table 22).

Table 22. SAP BusinessObjects Explorer for iPad's Support for Developers' and Administrators' Capabilities

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	OOO
	Reuse of existing content	OOO
	New content development	OOO
	Cross-BI platform integration	-
Application development	Mobile application integration	-
	Application customization	-
	Application distribution	OO
	Development SDK	OO
Administration	Integrated mobile infrastructure	OOO
	Administrator-driven setup	OO
	Application management	-
Security	Communications security	OO
	Data security	OOO
	Application security	OOO
	BI objects and user security	OOO
BI = business intelligence, SDK = software development kit Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

SAP BusinessObjects Mobile

BusinessObjects Mobile is SAP's iOS native application to quickly and easily mobilize desktop BusinessObjects Web Intelligence content. With a straightforward design process, using the same development workbench, it's possible to create engaging mobile BI reports that provide a good touchscreen experience, and which are responsive to users, thanks to the "on-device" execution.

The solution is going through a transformation process to leverage Sybase Unwired Platform as the backbone providing common security and communication capabilities to all SAP mobile tools. In

the long run this will mean enhanced manageability and better integration between two different mobile BI tools or, for example, an ERP system and a mobile dashboard. But, for now, the benefits for end users are still elusive.

Strengths: The pure native user interface is a strength on this application due to the impactful and responsive outputs it generates. The resulting mobile reports are easy to understand, with large charts and tables and some degree of interactivity. The system implements offline mode navigation and loads report information to the device before rendering, allowing for fast response during information exploration. The fast development process will also appeal to SAP customers, although, arguably, some would expect a zero-effort development process, as with some other vendors.

Areas of improvement: The tool could improve in the number of visualizations it makes available for end users, and should enhance their depth of analysis, with more options available for information exploration, such as more advanced chart and table filtering and sorting capabilities. The addition of maps and collaboration capabilities would also be useful. The largest enhancement, however, would come from the integration, in a single tool, of capabilities available in SAP BusinessObjects Mobile and SAP BusinessObjects Explorer for the iPad. Designers and end users would then decide what features to use at any given time, instead of forcing customers to have two information silos that might share the same information source but which are not interoperable.

End users' capabilities: The chart types available to end users, although small in number, are visually impressive, and can appeal to new user constituencies that today avoid traditional Web intelligence reports. Coupled with the offline exploration mode, this could create a robust and easy to implement KPI delivery tool, which can serve at the line of business and CxO level in the company. BI leaders, with SAP content available, can take advantage of this to foster mobile adoption, in initiatives that will require low implementation effort. Information exploration won't be too advanced, however, as analytics-like tasks are out of scope, and the available range of dashboard layouts and data widgets is limited.

Collaboration is possible using screen shot emailing. With SAP StreamWork (not evaluated in this report), users can also start and run comment threads, for discussion about KPIs (see Table 23).

Table 23. SAP BusinessObjects Mobile's Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and interaction	Rich information visualization	OOO
	Information overlay on maps	-
	Touchscreen experience	OOO
	Responsiveness	OOO
	Dashboard delivery	OOO
Information exploration	Guided information exploration	OO
	Table manipulation	OO
	Graphics manipulation	OO
	Map manipulation	-
	Report development on the device	-
Analytics	Ad hoc information exploration	-
	Packaged analytics	-
	Scenario simulations	-
	Analytic model development	-
Context awareness	GPS integration	-
	Camera integration	-
	Voice integration	-
	Sensor integration	OO
Offline mode exploration	Offline information navigation	OOO
	Automated information download	OOO
	Manual information download	OOO
Rich application functionality	Collaboration	OO

	Alerting	OO
	Write-back	-
	Multimedia support	OO
	Augmented reality	-
Multiple device support	Apple	OO
	Google	-
	RIM	OO
	Microsoft	OO

RIM = Research In Motion
Key: "OOO" = full support, "OO" = partial support, "-" = not supported

Source: Gartner (April 2012)

Developers and administrators' capabilities: SAP BusinessObjects Mobile makes full use of the existing BI platform, including user definitions and security profiles to access content. It will, without disruption to existing systems and processes, create a mobile-capable infrastructure. The mobilization design process will also be quickly mastered by current designers. System administrators, on the other hand, will have to rely on mobile device management platform capabilities, or manual setup and management processes, to deploy and support the solution (see Table 24).

Table 24. SAP BusinessObjects Mobile's Support for Developers' and Administrators' Capabilities

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	OOO
	Reuse of existing content	OOO
	New content development	OOO
	Cross-BI platform integration	-
Application development	Mobile application integration	-
	Application customization	-
	Application distribution	OO
	Development SDK	OO
Administration	Integrated mobile infrastructure	OOO
	Administrator-driven setup	OO
	Application management	-
Security	Communications security	OO
	Data security	OOO
	Application security	OOO
	BI objects and user security	OOO

BI = business intelligence, SDK = software development kit
Key: "OOO" = full support, "OO" = partial support, "-" = not supported

Source: Gartner (April 2012)

Tableau Software

Tableau Software for iPad

Tableau Software provides a hybrid application for the iPad — a native iOS application that renders the same Web-based content that can be consumed using Apple's mobile Safari Web browser. This way, users get seamless access to the same published analysis they know from the desktop, but with this tool they can easily leverage the touchscreen to filter data in maps, graphs or tables.

The native application doesn't add too much value, however, as there is no offline mode. Nor does it offer new analysis management capability or better information exploration features, which wouldn't be equally accessible through a simple Web link. Knowing this, system administrators supporting mobile application deployment and management will need to decide if they'll deploy the hybrid application or use a simple Web link to access Tableau's BI content.

Strengths: Tableau Software brings data discovery to mobile devices, providing a seamless transition between platforms, without the need for additional design effort involved in authoring with Tableau Desktop. In that sense, we can say that the main strength of the product is its unified information consumption experience. Additionally, the usually lean layouts of Tableau's dashboards blend well with the small real estate of mobile devices.

Areas of improvement: An improved mobility optimization would be beneficial, as Tableau Software is clearly delivering a Web-based experience — although it is mobile-aware, the tool does not fully leverage the native capabilities to augment the user experience on the mobile device. Therefore, the resulting BI content can seem limited, with few exploration or customization possibilities.

End users' capabilities: Users can recognize on the iPad application the usual visualizations from their desktops, but some tweaks have been added to ease information consumption. These are visible in the filtering process, which has mobile-specific enhancements, and are also available in mobile Web mode, with pop-up boxes for selections or visual aids in charts or maps. The application allows zoom and pan operations inside data visualizations, while retaining fixed graph axes and map placeholders. This is useful — for example, to explore a dense scatter plot, adding to the analytic profile of the application.

Due to the application's online nature, content is rendered after queries execute on Tableau's server, and the interface doesn't deliver the response level that users typically have on a native, offline-capable application. Filtering in charts can take some time to react, for example, due to communications and server performance. GPS and other mobile-specific capabilities are also unavailable.

Even so, the application serves its purpose of delivering a compelling and visually rich user experience on the go that will appeal to and serve its customer base (see Table 25).

Table 25. Tableau Software for iPad's Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and interaction	Rich information visualization	OOO
	Information overlay on maps	OOO
	Touchscreen experience	OO
	Responsiveness	OO
	Dashboard delivery	OOO
Information exploration	Guided information exploration	OOO
	Table manipulation	OO
	Graphics manipulation	OOO
	Map manipulation	OOO
	Report development on the device	-
Analytics	Ad hoc information exploration	OOO
	Packaged analytics	-
	Scenario simulations	OO
	Analytic model development	OO
Context awareness	GPS integration	-
	Camera integration	-
	Voice integration	-
	Sensor integration	-
Offline mode exploration	Offline information navigation	-
	Automated information download	-
	Manual information download	-
Rich application functionality	Collaboration	OO

	Alerting	-
	Write-back	-
	Multimedia support	OOO
	Augmented reality	-
Multiple device support	Apple	OOO
	Google	OO
	RIM	OO
	Microsoft	OO
RIM = Research In Motion Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

Developers' and administrators' capabilities: As in other data discovery tools, dashboard designers don't have technical requirements that force them to do any extra development to leverage dashboards on a mobile device. But this doesn't mean that visualizations won't need some rework to optimize the consumption experience. In Tableau Software that has mostly to do with using the correct page size to avoid scrolling and undesired page pan, with tabs to improve information navigation. Administrators won't see any changes in the server platform, and will only need to address the additional deployment and configuration tasks for the native application, for which an external mobile device management platform would be helpful (see Table 26).

Table 26. Tableau Software for iPad's Support for Developers' and Administrators' Capabilities

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	OOO
	Reuse of existing content	OOO
	New content development	OOO
	Cross-BI platform integration	-
Application development	Mobile application integration	OOO
	Application customization	OOO
	Application distribution	-
	Development SDK	-
Administration	Integrated mobile infrastructure	OOO
	Administrator-driven setup	-
	Application management	-
Security	Communications security	OO
	Data security	OOO
	Application security	OOO
	BI objects and user security	OOO

BI = business intelligence, SDK = software development kit
Key: "OOO" = full support, "OO" = partial support, "-" = not supported

Source: Gartner (April 2012)

Tibco Spotfire

Tibco Spotfire for iPad

Tibco Spotfire delivers data discovery dashboards that users can explore in a Web interface, and it is now adding a hybrid iPad application for mobility, with Web content rendered in a native container. Dashboard exploration has been enhanced with mobile-specific aids such as form factor and orientation awareness, which optimizes screen rendering for the device. But navigation and

information exploration can sometimes be difficult to use due to the desktop nature of visualizations and selectors.

Strengths: Tibco Spotfire can bring all the data discovery capabilities of the desktop solution to the mobile device, including a comprehensive range of information exploration features. Existing users, therefore, will appreciate being able to access the same BI content and explore it through the familiar Spotfire dashboard paradigm. In addition, Tibco Spotfire for iPad had the highest score in this evaluation, for its analytics critical capability, and it is very likely to continue to push the boundaries in that area. It's an encouraging evolution for mobile BI, and will appeal to power users, although Gartner regards mobile analytics as still a long way from delivering the breadth and depth currently available in desktop-based solutions.

Areas of improvement: The penalty for unified BI content delivery across platforms can be mobile interactivity for end users — their experience may suffer from the smaller screen size, which sometimes makes components such as tabs, menu icons, checkboxes or sliders difficult to use because of their small size ("pinch to zoom" is a less effective way of solving the issue). Although Tibco Spotfire supports a specific iPad design mode, it tends to lead designers into the unified content trap: crowded dashboard screens. The product needs to improve in this area, addressing the creation of highly usable layouts on mobile devices, and pushing designers to deliver mobile-optimized content — and optimizing the content itself, with features such as oversized checkboxes.

End users' capabilities: Users will get all the rich functionality they come to expect from a Tibco Spotfire dashboard, but not the same ease of use for quick exploration if the dashboard designers opt to deliver the same amount of content, because the screen may become overloaded. For a better user experience, tables must have less information and graphs less detail, making them a better fit for the smaller screens on mobile devices. Because Tibco Spotfire for the iPad depends on a data connection to render content, and doesn't support offline navigation, these simpler outputs will also help to deliver a faster and more responsive user interface.

Whatever the amount of content delivered, it's possible to do ad hoc information exploration, including interactive discovery through compelling visualizations, dynamic tables and information overlaid on maps. GPS integration, as with other mobile context-awareness capabilities, is not supported. Seamlessly trailing desktop-based capabilities, users will be able to start from a predefined dataset and a group of filters defined during dashboard design, to derive relevant business conclusions on the go. Therefore, the tool will appeal to advanced knowledge workers — power users that need in-depth information exploration.

Touch gestures are supported, but the touchscreen interface isn't made full use of, and the tool needs to improve the mobile experience, recognizing that mobile devices have unique user interface conventions and requirements that differ from the Web-based experience. It could, for example, use stacked panels within the same tab, switching from a table to a graph or map using swipe, or selectors that are more finger-friendly. Because of this, more casual users looking for a quick high-level overview of the business may not be as enthusiastic as their power-user counterparts.

The tool also offers simple but useful collaboration features, such as the ability to annotate a dashboard with on-screen drawing and writing, as well as mail sharing capabilities. To step up the

collaboration capabilities, users can also consider tibbr (which is not evaluated in this report), an additional social platform offering from Tibco's portfolio (see Table 27).

Table 27. Tibco Spotfire's Support for End Users' Capabilities

Capabilities	Item	Out-of-the-Box Support
Information display and interaction	Rich information visualization	OOO
	Information overlay on maps	OOO
	Touchscreen experience	OOO
	Responsiveness	OO
	Dashboard delivery	OOO
Information exploration	Guided information exploration	OOO
	Table manipulation	OO
	Graphics manipulation	OOO
	Map manipulation	OO
	Report development on the device	-
Analytics	Ad hoc information exploration	OOO
	Packaged analytics	OO
	Scenario simulations	OO
	Analytic model development	OOO
Context awareness	GPS integration	-
	Camera integration	-
	Voice integration	-
	Sensor integration	OO
Offline mode exploration	Offline information navigation	-
	Automated information download	-
	Manual information download	-
Rich application functionality	Collaboration	OO
	Alerting	-

	Write-back	OO
	Multimedia support	OOO
	Augmented reality	-
Multiple device support	Apple	OO
	Google	OO
	RIM	OO
	Microsoft	OO
RIM = Research In Motion Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

Developers and administrators' capabilities: System administrators won't need to make changes to the existing BI infrastructure, which is good news from the point of view of management and total cost of ownership. If automated deployment is needed, for a large or remotely dispersed user base, a mobile device management platform is recommended to support the process. Tibco Spotfire for iPad eases the development effort by supporting existing desktop dashboards, avoiding new development altogether and allowing the development of new content within the same workbench, without the need for additional training. Designers should make good use of this "unspent" effort and consider using it to rearchitect layouts, improving the mobile user experience (see Table 28).

Table 28. Tibco Spotfire's Support for Developers' and Administrators' Capabilities

Capabilities	Item	Out-of-the-Box Support
Ease of use for developers	Integrated development workbench	OOO
	Reuse of existing content	OOO
	New content development	OOO
	Cross-BI platform integration	-
Application development	Mobile application integration	OOO
	Application customization	OOO
	Application distribution	OOO
	Development SDK	OO
Administration	Integrated mobile infrastructure	OOO
	Administrator-driven setup	-
	Application management	-
Security	Communications security	OO
	Data security	OOO
	Application security	OOO
	BI objects and user security	OOO
BI = business intelligence, SDK = software development kit Key: "OOO" = full support, "OO" = partial support, "-" = not supported		

Source: Gartner (April 2012)

Overall Support for Functionality

Tables 29 and 30 summarize the functionality supported by the vendors' tools covered in this report.

Table 29. Support for End Users' Capabilities

		Out-of-the-Box Support											
Capabili-ties	Item	Enter-prise Signal	Exxova	IBM	Infor-mation Builders	MeLLmo	Micro-Strat-egy	Oracle	Qlik-Tech	SAP Busi-ness-Objects Explor-er	SAP Busi-ness-Objects Mobile	Ta-bleau Soft-ware	Tibco Spotfire
Informa-tion dis-play and interac-tion	Rich information visualization	OO	OOO	OOO	OO	OOO	OOO	OO	OOO	OO	OOO	OOO	OOO
	Information overlay on maps	OO	OOO	OO	OOO	-	OOO	OO	OO	OOO	-	OOO	OOO
	Touchscreen expe-rience	OO	OO	OOO	OO	OOO	OOO	OO	OO	OOO	OOO	OO	OOO
	Responsiveness	OOO	OO	OOO	OO	OOO	OOO	OO	OO	OOO	OOO	OO	OO
	Dashboard delivery	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO	-	OOO	OOO	OOO
Informa-tion ex-ploration	Guided information exploration	OOO	OOO	OOO	OOO	OO	OOO	OOO	OOO	OO	OO	OOO	OOO
	Table manipulation	OO	OOO	OO	OOO	OOO	OO	OO	OO	OOO	OO	OO	OO
	Graphics manipula-tion	OO	OOO	OO	OOO	OOO	OOO	OO	OO	OOO	OO	OOO	OOO
	Map manipulation	OO	OOO	OO	OOO	-	OOO	OOO	OO	OOO	-	OOO	OO

	Report development on the device	-	OOO	-	OO	-	-	-	-	OO	-	-	-
Analytics	Ad hoc information exploration	-	OOO	-	OOO	OO	OO	-	OOO	OOO	-	OOO	OOO
	Packaged analytics	OOO	OO	OO	-	-	OOO	OO	-	OO	-	-	OO
	Scenario simula-tions	-	OOO	-	OO	-	OO	OO	OO	-	-	OO	OO
	Analytic model de-velopment	-	-	OO	OO	-	OO	OO	OO	-	-	OO	OOO
Context aware-ness	GPS integration	OOO	-	OOO	-	-	OOO	-	-	OOO	-	-	-
	Camera integration	OOO	-	-	-	-	OOO	-	-	-	-	-	-
	Voice integration	OO	-	-	-	-	-	-	-	-	-	-	-
	Sensor integration	-	-	-	-	OO	OO	-	OO	OOO	OO	-	OO
Offline mode ex-ploration	Offline information navigation	OOO	-	OOO	OOO	OOO	OOO	-	-	OOO	OOO	-	-
	Automated informa-tion download	OOO	-	OOO	OOO	OOO	OOO	-	-	OOO	OOO	-	-
	Manual information download	OOO	-	OOO	OOO	OOO	OOO	-	-	OOO	OOO	-	-
Rich ap-plication	Collaboration	OO	OO	OO	OO	OO	OO	OO	OOO	OO	OO	OO	OO

function-ality													
	Alerting	-	OO	OO	OO	-	OOO	OO	OO	OO	OO	-	-
	Write-back	OOO	OO	-	OOO	-	OOO	OOO	OO	-	-	-	OO
	Multimedia support	OOO	OOO	OOO	OOO	-	OOO	OO	OOO	-	OO	OOO	OOO
	Augmented reality	-	-	-	-	-	-	-	-	OOO	-	-	-
Multiple device support	Apple	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OO	OOO	OO
	Google	OOO	OOO	OOO	OO	-	OOO	-	OOO	-	-	OO	OO
	RIM	-	-	OOO	OO	OO	OO	-	OO	-	OO	OO	OO
	Microsoft	-	-	-	OO	-	-	-	OO	-	OO	OO	OO

RIM = Research In Motion
Key: "OOO" = full support, "OO" = partial support, "-" = not supported

Source: Gartner (April 2012)

Table 30. Support for Developers' and Administrators' Capabilities

		Out-of-the-Box Support											
Capabilities	Item	Enterprise Signal	Exxova	IBM	Information Builders	MeLLmo	MicroStrategy	Oracle	QlikTech	SAP Business-Objects Explorer	SAP Business-Objects Mobile	Tableau Software	Tibco Spotfire
Ease of use for developers	Integrated development workbench	-	OOO	OOO	OOO	-	OOO	OOO	OOO	OOO	OOO	OOO	OOO
	Reuse of existing content	OO	OOO	OOO	OOO	OO	OOO	OOO	OOO	OOO	OOO	OOO	OOO
	New content development	OO	OOO	OOO	OOO	OO	OOO	OOO	OOO	OOO	OOO	OOO	OOO
	Cross-BI platform integration	OO	OOO	-	-	OOO	-	-	-	-	-	-	-
Application development	Mobile application integration	OOO	-	-	OOO	OO	OOO	-	OOO	-	-	OOO	OOO
	Application customization	OO	-	-	OOO	OO	OOO	OO	OOO	-	-	OOO	OOO
	Application distribution	OOO	OOO	OO	OOO	OO	OOO	OO	OOO	OO	OO	-	OOO
	Development SDK	OO	-	OO	OO	-	OOO	OO	OO	OO	OO	-	OO

Admin-istration	Integrated mobile infrastructure	OO	OO	OOO	OOO	OO	OOO	OOO	OOO	OOO	OOO	OOO	OOO
	Administrator-driven setup	-	OO	-	-	OO	OO	-	OOO	OO	OO	-	-
	Application management	-	OO	OO	-	OOO	OO	OO	OOO	-	-	-	-
Security	Communications security	OO	OO	OOO	OO	OOO	OOO	OO	OO	OO	OO	OO	OO
	Data security	OOO	OOO	OO	OO	OO	OOO	OOO	OOO	OOO	OOO	OOO	OOO
	Application security	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO
	BI objects and user security	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO	OOO

BI = business intelligence, SDK = software development kit
Key: "OOO" = full support, "OO" = partial support, "-" = not supported

Source: Gartner (April 2012)

Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Mobile Business Intelligence, Finally"

"Who's Who in Mobile BI"

"Decision Criteria for Mobile BI Tool Selection"

"Magic Quadrant for Mobile Device Management Software"

"Magic Quadrant for Business Intelligence Platforms"

Critical Capabilities Methodology

"Critical capabilities" are attributes that differentiate products in a class in terms of their quality and performance. Gartner recommends that users consider the set of critical capabilities as some of the most important criteria for acquisition decisions.

This methodology requires analysts to identify the critical capabilities for a class of products. Each capability is then weighted in terms of its relative importance overall, as well as for specific product use cases. Next, products are rated in terms of how well they achieve each of the critical capabilities. A score that summarizes how well they meet the critical capabilities overall, and for each use case, is then calculated for each product.

Ratings and summary scores range from 1.0 to 5.0:

1 = Poor: most or all defined requirements not achieved.

2 = Fair: some requirements not achieved.

3 = Good: meets requirements.

4 = Excellent: meets or exceeds some requirements.

5 = Outstanding: significantly exceeds requirements.

Product viability is distinct from the critical capability scores for each product. It is our assessment of the vendor's strategy and its ability to enhance and support a product over its expected life cycle; it is not an evaluation of the vendor as a whole. Four major areas are considered: strategy, support, execution and investment. Strategy includes how a vendor's strategy for a particular product fits in relation to its other product lines, its market direction and its business overall. Support includes the quality of technical and account support as well as customer experiences for that product. Execution considers a vendor's structure and processes for sales, marketing, pricing and deal management. Investment considers the vendor's financial health and the likelihood of

the individual business unit responsible for a product to continue investing in it. Each product is rated on a five-point scale from poor to outstanding for each of these four areas, and it is then assigned an overall product viability rating.

The critical capabilities Gartner has selected do not represent all capabilities for any product and, therefore, may not represent those most important for a specific use situation or business objective. Clients should use a critical capabilities analysis as one of several sources of input about a product before making an acquisition decision.

Regional Headquarters

Corporate Headquarters
56 Top Gallant Road
Stamford, CT 06902-7700
USA
+1 203 964 0096

European Headquarters
Tamesis
The Glanty
Egham
Surrey, TW20 9AW
UNITED KINGDOM
+44 1784 431611

Asia/Pacific Headquarters
Gartner Australasia Pty. Ltd.
Level 9, 141 Walker Street
North Sydney
New South Wales 2060
AUSTRALIA
+61 2 9459 4600

Japan Headquarters
Gartner Japan Ltd.
Atago Green Hills MORI Tower 5F
2-5-1 Atago, Minato-ku
Tokyo 105-6205
JAPAN
+ 81 3 6430 1800

Latin America Headquarters
Gartner do Brazil
Av. das Nações Unidas, 12551
9° andar—World Trade Center
04578-903—São Paulo SP
BRAZIL
+55 11 3443 1509